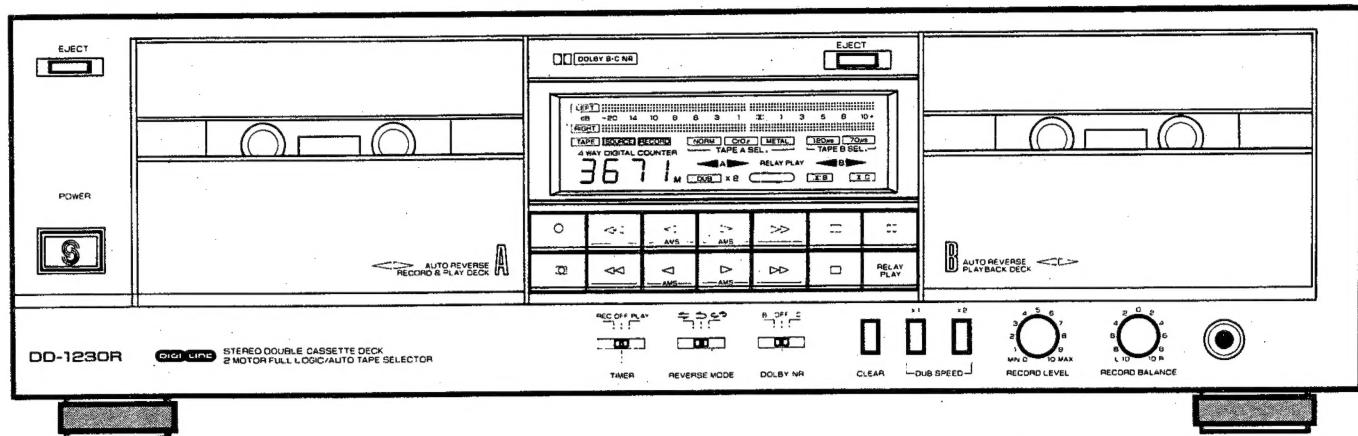


SERVICE MANUAL

DD-1230R

AUTO REVERSE STEREO DOUBLE CASSETTE DECK



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NOTICE

- This manual is for authorized and qualified service personnel, so the basic service procedure and commonsense of safety are not described in this manual.
- Sherwood always makes every endeavor to improve the products, therefore the specifications and data provided are subject to change without notice.

S Sherwood

To Service Personnel

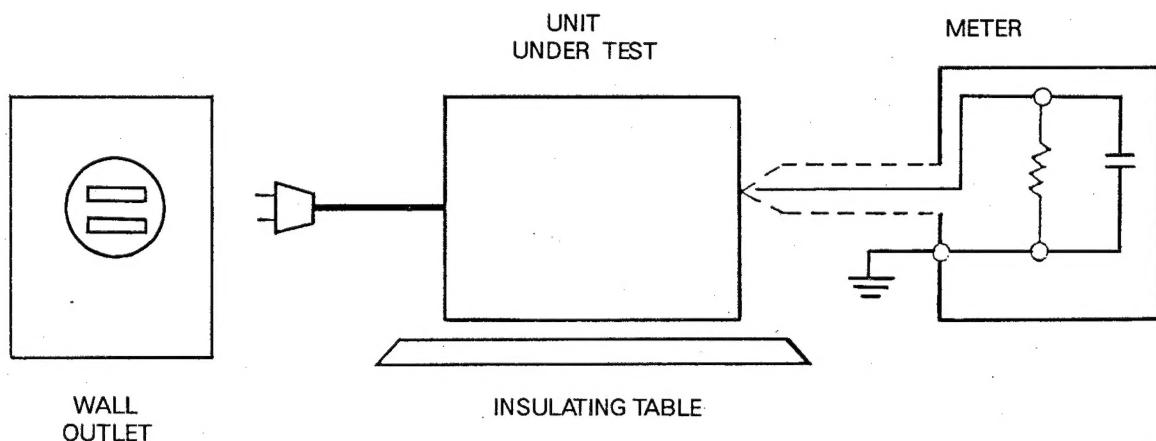
1. Critical Components Information.

The Δ marked components on schematic diagram and parts list be replaced with the parts having specifications equal to those originally installed.

2. Leakage Current Measurement(For 120V Version only).

When the service has been completed, make sure that all exposed conductive surfaces are properly insulated from the power supply circuits.

- Leakage current meter should have an input impedance of 1500 ohms resistive shunted by $0.15\mu\text{F}$ capacitor.
- Leakage current shall not be exceed 0.5mA.



3. Turn the unit OFF, and disconnect the power supply cord during disassembly and replacement of parts.

4. When the service has been completed, be sure to check all protective device and spacings before returning the unit to customer.

Specifications

Track Configuration

4 Track 2 Channel and a Rotary Reverse Type Head Stereo Double Cassette Deck

Motor

Electronic Governor High Torgue DC Motor×2

Mechanism

1 Motor, 1-Solenoid Mechanism×2

Heads

Rotary Reverse Head (Rec/Playback Head×1, Erase Head×1)

Rotary Reverse Head (Playback Head×1)

Tape speed 1-7/8ips (4.76cm/sec) ± 1.0

(FWD/REV)

Wow Flutter (W.RMS) No more than 0.12% (JIS)

No more than 0.2% (DIN)

Fast Winding Time (C-60) About 90 sec.

Input Sensitivity/Impedance

Line 80mV/47 kohms

Output Level/Load Impedance

Line 500mV/1.6 kohms

Signal to Noise Ratio (W.CCIR/ARM)

CrO₂ Tape with Dolby B/C NR More than 65/74dB

CrO₂ Tape without Dolby NR More than 56dB

Frequency Response (±20dB Rec Dolby NR off)

Normal Tape 35 Hz ~ 17.5kHz ± 3dB

CrO₂ Tape without Dolby NR 35 Hz ~ 17 kHz ± 3dB

Metal tape 35Hz ~ 18 kHz ± 3dB

THD (a 1kHz, 0dB Rec) No more than 1.8%

Channel Separation More than 39dB

GENERAL SPECIFICATIONS

Power Consumption 20Watts

Dimensions (W)440×(H)175×(D)280mm

(W)17.3×(H)4.9×(D)11inches

Weight 6.2kg (13.6lbs)

Power Supply

A : USA & CANADIAN MODEL	120V AC, 60Hz
B : MULTI-VOLTAGE MODEL	120V/220V AC, 60/50Hz
C : GENERAL EUROPEAN MODEL	220V AC, 50Hz
D : WEST GERMAN & ITALIAN MODEL	220V AC, 50Hz
E : BRITISH & AUSTRALIAN MODEL	240V AC, 50Hz
F : SWISS & SCANDINABIAN MODEL	220V AC, 50Hz

NOTE: Specifications and the design subject to change without notice for improvements.

Electrical Adjustment Procedure

1. Before Measurements and Adjustments

• General Conditions

The following general conditions apply to the electrical measurements and adjustments unless especially stated otherwise.

- Before making adjustment, operate the appliance for more than 2 minutes.
- Ambient temperature 20 to 25°C
- Dolby Slide switch SW off.
- The voltages have been measured relative to earth.
- Volume control recording level Volume max.
- The measurements and adjustments are relate to the left-hand channel.

The corresponding test points and adjusting elements for the right-hand channel are given in brackets.

- Since head magnetization, dust accumulation,etc. are likely to introduce in the various characteristics, it is very important that the heads are properly demagnetized and cleaned.
- Use 500mV (200nWb/m) for 0 dB as the standard level of the unit.
- Proceed with the recording system adjustment after having finished the playback section adjustment.

Playback section

Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	Adjust with	Adjust to
Head Azimuth	TCC-153 10 kHz (A. BEX)	FWD Play (A & B Deck)		Line Output	ACmV-meter Oscilloscope	Head adjusting screw (left side)	Max • Lissajous' figure become a straight line with an angle 45 degrees *a
		REV Play (A & B Deck)				(right side screw)	
Playback Speed normal	TCC-111 3 kHz, ± 10 dB (A. BEX)	Play (A & B Deck)		Line Output	Wow and Flutter	Meter	* b 3000 Hz ± 15 Hz
Playback Sensitivity	TCC-130 400 Hz 0 dB (A. BEX)	Play (A & B Deck)		Line Output	ACmV-meter	A deck VR109L/R	500mV
						B deck VR201L/R	
Playback frequency response	TCC-184B 12.5 k/1 kHz /63 Hz (A. BEX)	Play (A & B Deck)		Line Output	ACmV-meter		See graph Fig. 2 frequency response

Recording section

Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	Adjust with	Adjust to
OSC	MAX-60 (TDK)	REC/PAUSE		C442	Frequency Counter	L443	105 kHz
105 kHz trap suppression	MAX-60 (TDK)	REC/PAUSE		TP2L/R	ACmV-meter	L441L/R	Minimize the reading on ACVM
Target value BIAS	METAL	REC/PAUSE		TP1L/R	ACmV-meter	VR441L/R	7.5mV
	CrO ₂	REC/PAUSE				VR445	5.0mV
	Normal	REC/PAUSE				VR446	3.0mV

Recording sensitivity		REC/PLAY PLAY	400 Hz to Line input	Line output	ACmV-meter	LF generator	500mV
							500mV *c
Bias		REC/PLAY		TP1L/R	ACmV-meter	See target Value bias	
			400 Hz to Line input		ACmV-meter	LF generator	50mV
		PLAY		Line Output	ACmV-meter		See Fig. 3 if it necessary repeat bias adjustment *d
19 kHz suppression	Arbitrary tape	REC	400 Hz to Line output	Line output	ACmV-meter	LF generator	500mV
		Dolby NR SW ON	19 kHz to Line input	Line output		L301L/R	Minimixe the reading on ACVM

NOTE:

- *a. Prior to any measurement or adjustment with the tape running, head should be degaussed and cleaned. Confer see Fig. (Electrical, ADJ Point)
- *b. The max. permissible speed variation $\pm 0.5\%$. Moreover the Wow-and-Flutter can be read. This value should not exceed 0.1%.
- *c. The voltage on Line Output should read $500\text{mV} \pm 20\text{mV}$.

If this is not the case reduce the LF signal (bias disabled) by as the reading was too low or too high by means of VR401L/R

*d. When the channel is adjusted this may slightly affect the adjust If the adjustment is correct the frequency response curve will be in Fig. 3 distortion $\leq 3\%$.

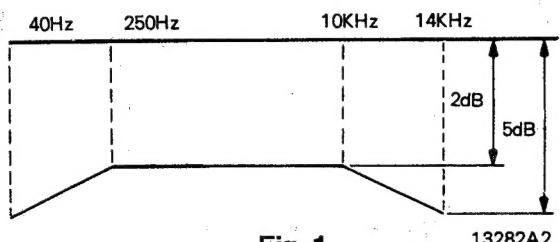


Fig. 1

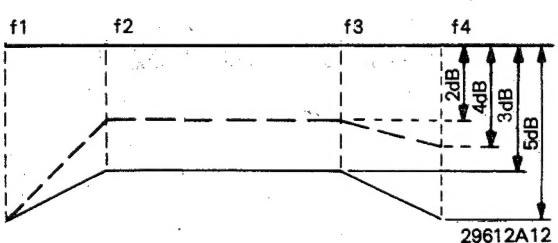


Fig. 2

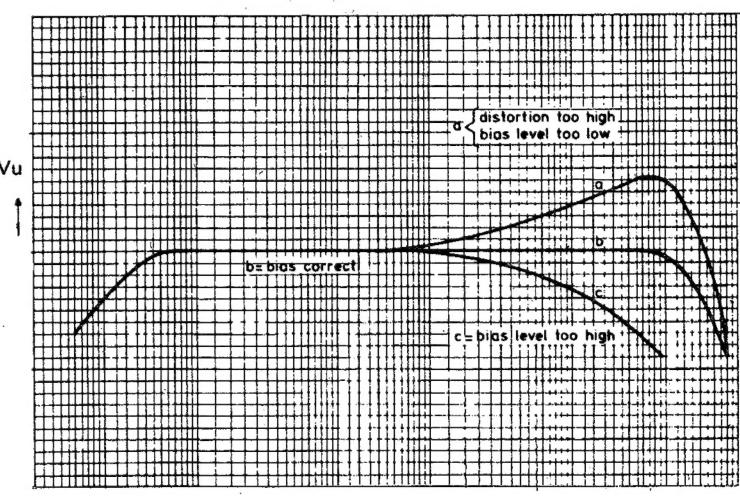
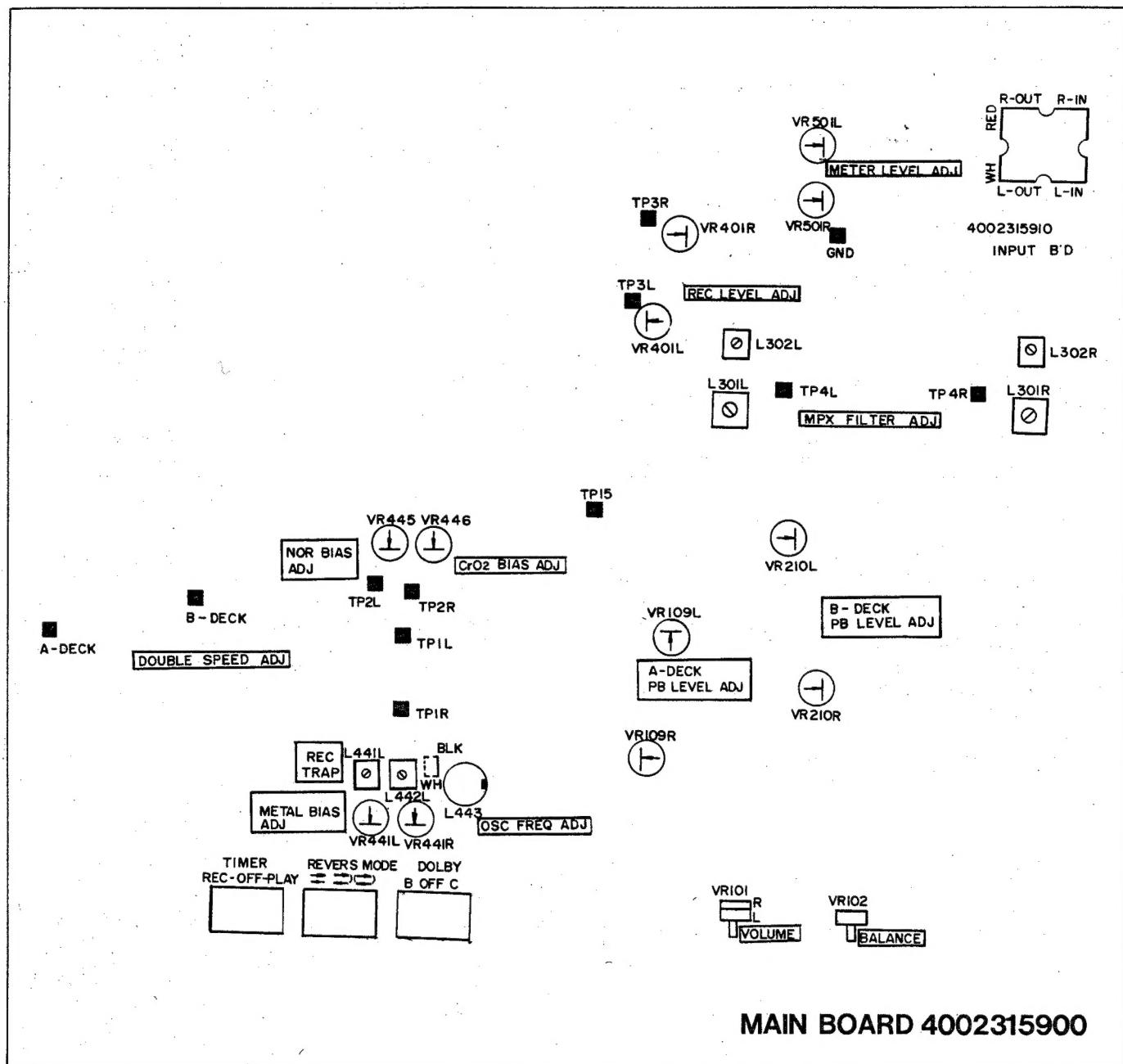


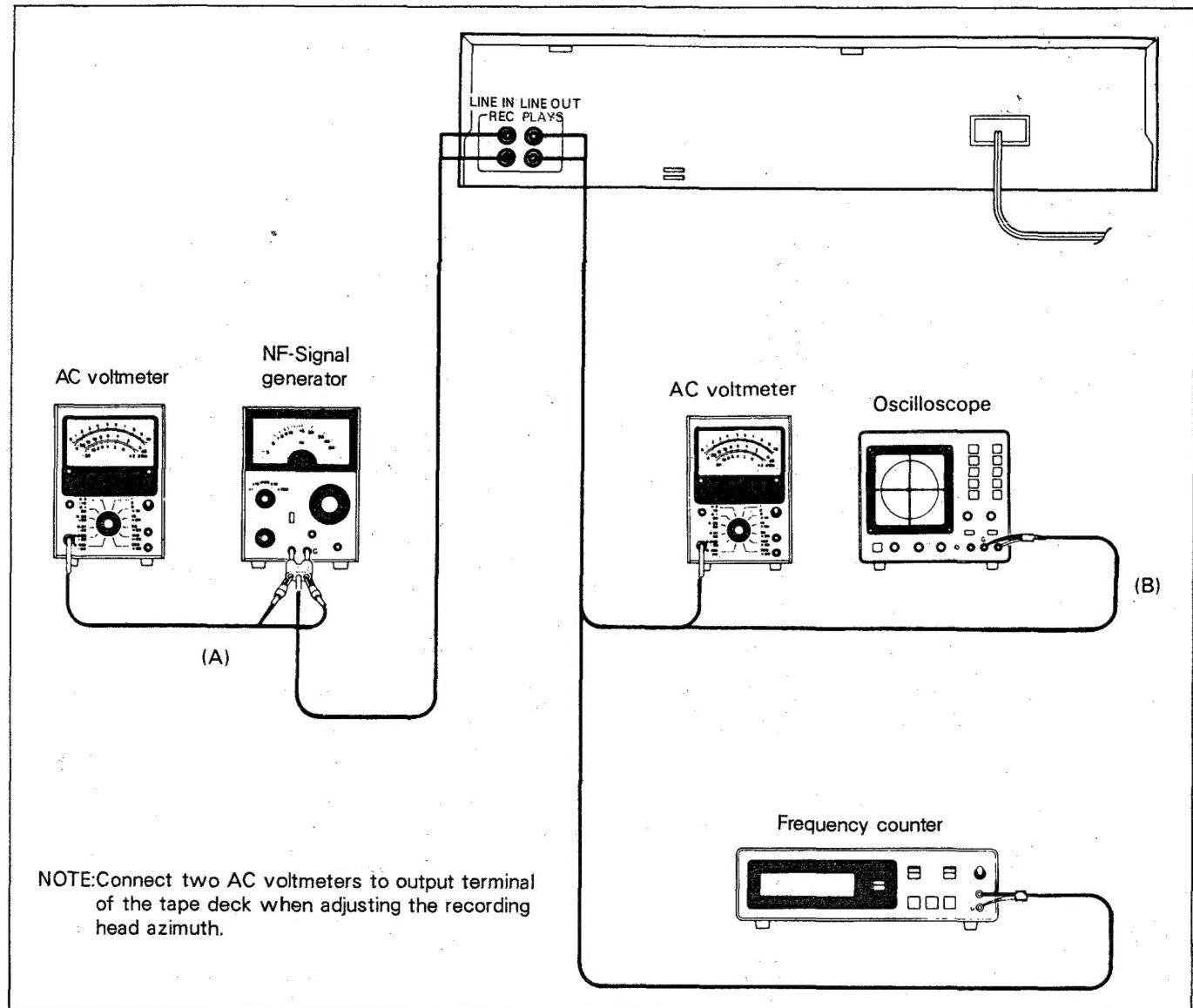
Fig. 3

	f1	f2	f3	f4
Metal	30Hz	100Hz	12.5KHz	18KHz
CrO ₂	30Hz	100Hz	12.5KHz	16KHz
Normal	30Hz	100Hz	12.5KHz	16KHz

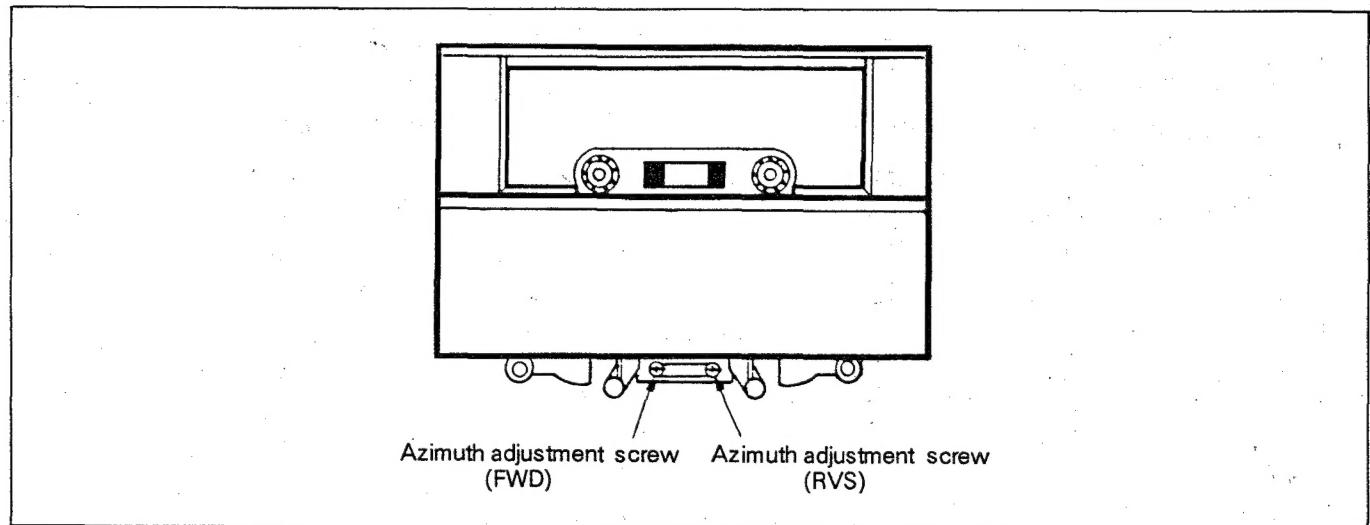
Electrical Adjustment Point



- TEST EQUIPMENT CONNECTIONS



- AZIMUTH ADJUSTMENT POINT

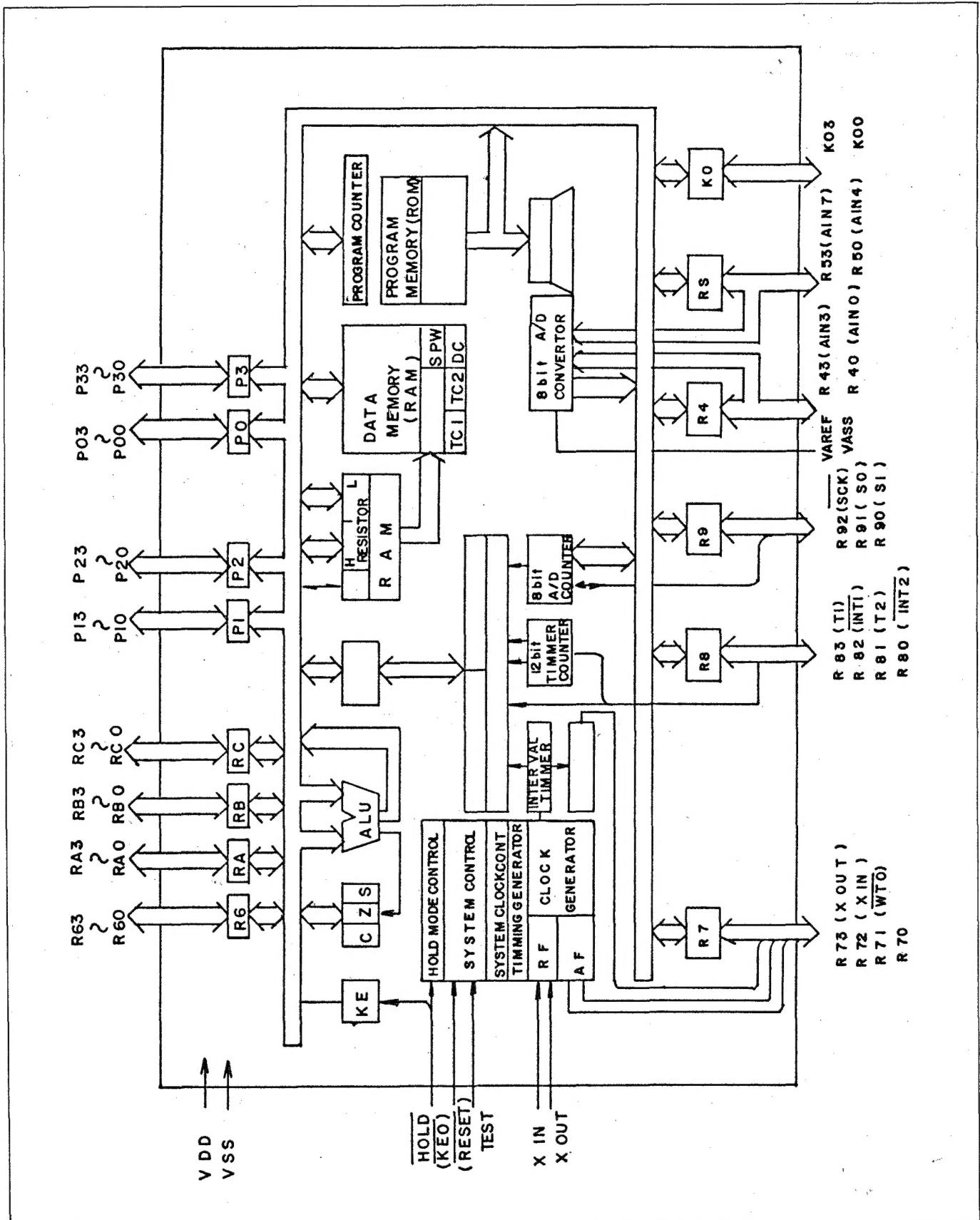


Circuit Description

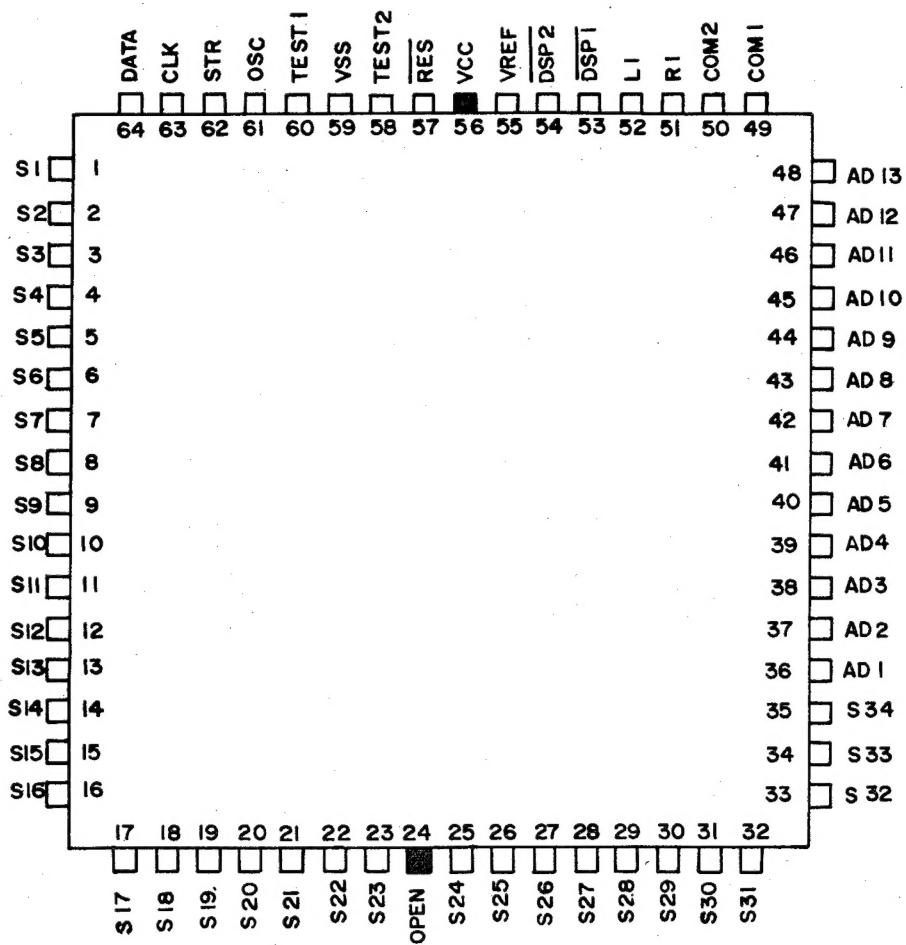
– Pin Assignment(IC 701:DWP 902), Microprocessor

VAREF	1	64	VDD
VASS	2	63	RC3 (DATA)
R40(AIN 0)	3	62	RC2 (CLOCK)
R41(AIN 1)	4	61	RC1 (C,E)
R42(AIN 2)	5	60	RC0 (B 70 μ S)
R43(AIN 3)	6	59	R92(SCK)(B Cr02)
KEY	R50(AIN 4)	58	R91(SO) (B PLAY)
MATRIX	R51 (AIN 5)	57	R90(SI) (B PACK)
INPUT	R52(AIN 6)	56	R83(T1) (B REEL)
	R53(AIN 7)	55	R82(INT1) (POWER DOWN)
KEY	R60	54	R81(T2) (A REEL)
MATRIX	R61	53	R80(INT2)(REMOCON IN)
OUTPUT	R62	52	HOLD(KEO) (N,C)
	R63	51	X OUT
(A METAL) R70	15	DWP 902	X IN
(A Cr02) R71(WTD)	16		RESET
(R REC) R72(XTIN)	17		K03(N,C)
(F REC) R73(XTOUT)	18		K02(N,C)
(A PLAY) RAO	19		K01(N,C)
(A PACK) RAI	20		K00(N,C)
(A OUT) RA2	21		K83(DUB x1)
(B OUT) RA3	22		K82(DUB x2)
(A MTR3) P00	23		K81(PLAY OUT)
(A MTR2) P01	24		K80(REC OUT)
(A MTR1) P02	25		P33(B MTR3)
(A SOL(–)) P03	26		P32(B MTR2)
(A SOL(H)) P10	27		P31(B MTR1)
(METAL OUT) P11	28		P30(B SOL(H))
(Cr02) P12	29		P23(B SOL(–))
(Nor OUT) P13	30		P22(LINE MUTE)
TEST	31		P21(REC MUTE)
VSS	32		P20(AMS OUT)

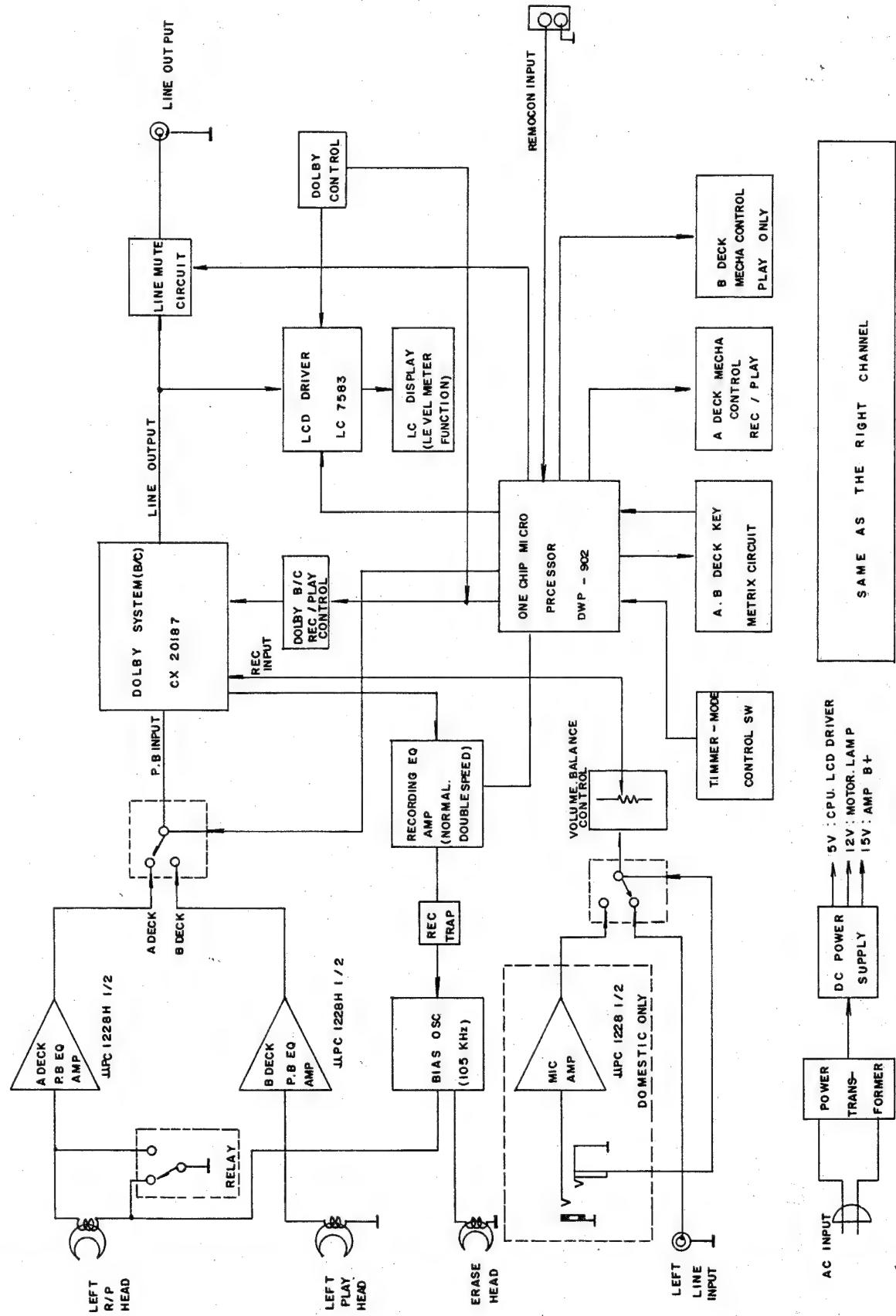
– Internal Block Diagram, DWP 902



-Pin Assignment(IC 901, LC 7583:LCD Driver)



Block Diagram



Electrical Parts List

PRODUCT SAFETY NOTE: Products marked with a \triangle have special characteristics important to safety. If you any of these components, read carefully the product safety notice of this Manual.

RESISTORS and CAPACITORS Tolerance are as follows, D: $\pm 0.5\%$ J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$ Z: $+80\%$, -20% .

MAIN BOARD 4002315900

Ref. No.	Parts No.	Description	Position	Remark
• Capacitors				
C101L/R	3579561130	Ceramic 560PF 50V J	C4/C5	
C102L/R	3479210971	Electrolytic 1 μ F 50V M	C4/C5	
C103L/R	3579221130	Ceramic 220PF 50V J	D4/C5	
C104L/R	3479210971	Electrolytic 1 μ F 50V M	D5	
C105L/R	3679682120	Mylar 0.068 μ F 100V J	D5	
C106L/R	3479247971	Electrolytic 4.7 μ F 50V M	D5	
C107L/R	3679153120	Mylar 0.015 μ F 100V J	D5	
C108	3479233031	Electrolytic 33 μ F 16V M	D5	
C109	3479210971	Electrolytic 1 μ F 50V M	D4	
C110	3479210971	Electrolytic 1 μ F 50V M	D4	
C111	3479247971	Electrolytic 4.7 μ F 50V M	D4	
C112	3479222871	Electrolytic 0.22 μ F 50V M	D4	
C113	3479222871	Electrolytic 0.22 μ F 50V M	D4	
C114	3479222031	Electrolytic 22 μ F 16V M	D4	
C115	3479210971	Electrolytic 1 μ F 50V M	D4	
C201L/R	3579271130	Ceramic 270PF 50V J	F4	
C202L/R	3579271130	Ceramic 270PF 50V J	F4	
C203L/R	3479233071	Electrolytic 33 μ F 16V M	F4	
C204L/R	3579221130	Ceramic 220PF 50V J	F4	
C205L/R	3479210971	Electrolytic 1 μ F 50V M	F4/F5	
C206L/R	3679682120	Mylar 0.068 μ F 100V J	E4	
C207L/R	3479247971	Electrolytic 4.7 μ F 50V M	E4	
C208L/R	3679153120	Mylar 0.015 μ F 100V J	E4	
C209	3479233031	Electrolytic 33 μ F 16V M	E4	
C210	3479210971	Electrolytic 10 μ F 50V M	F5	KS
C211	3479210961	Electrolytic 10 μ F 35V M	F5	KS
C212	3479233031	Electrolytic 33 μ F 16V M	F5	KS
C213	3479247971	Electrolytic 4.7 μ F 50V M	F5	KS
C214	3479210971	Electrolytic 1 μ F 50V M	F5	KS
C215	3479210971	Electrolytic 1 μ F 50V M	F5	KS
C216	3579330130	Ceramic 33PF 50V J	F5	KS
C217	3579222130	Ceramic 220PF 50V J	F5	KS
C301L/R	3479247971	Electrolytic 4.7 μ F 50V M	E3	
C302L/R	3479210971	Electrolytic 10 μ F 50V M	E3/F3	
C303L/R	3679102120	Mylar 0.001 μ F 100V J	E3/F3	
C304L/R	3479247971	Electrolytic 4.7 μ F 50V M	E3/F3	
C305L/R	3479222971	Electrolytic 2.2 μ F 50V M	E3/F3	
C306L/R	3579561130	Ceramic 560PF 50V J	E3/F3	
C307L/R	3679472120	Mylar 0.0047 μ 100V J	E3/F3	
C308L/R	3409222121	Electrolytic 220 μ F 10V M	E2/F2	
C309L/R	3679332120	Mylar 0.0033 μ 100V J	E3/F3	
C310L/R	3679272120	Mylar 0.0027 μ 100V J	E2/F2	
C311L/R	3479215871	Electrolytic 0.15 μ F 50V M	E2/F2	
C312L/R	3479222871	Electrolytic 0.22 μ F 50V M	E2/F2	
C313L/R	3679683120	Mylar 0.068 μ F 100V J	E2/F2	
C314L/R	3679473120	Mylar 0.047 μ F 100V J	E2/F2	
C315L/R	3679103120	Mylar 0.01 μ F 100V J	E2/F2	
C316L/R	3679682120	Mylar 0.068 μ F 100V J	E2/F2	
C317L/R	3479247971	Electrolytic 4.7 μ F 50V M	E2/F2	
C318L/R	3479247971	Electrolytic 4.7 μ F 50V M	E2	
C319L/R	3479247871	Electrolytic 0.47 μ F 50V M	E2/F2	
C320L/R	3679153120	Mylar 0.015 μ F 100V J	E2/F2	
C321	3479210971	Electrolytic 10 μ F 50V M	C5	
C322L/R	3679102120	Mylar 0.001 μ F 100V J	D3/F2	
C323	3479233031	Electrolytic 33 μ F 16V M	E3	
C324	3479247971	Electrolytic 4.7 μ F 50V M	E3	
C401L/R	3479247971	Electrolytic 4.7 μ F 50V M	D2/D1	
C402L/R	3479247971	Electrolytic 4.7 μ F 50V M	D3/D1	
C403L/R	3479210971	Electrolytic 1 μ F 50V M	D3/D1	
C404L/R	3679273120	Mylar 0.027 μ F 100V J	D3/D1	
C405L/R	3479233031	Electrolytic 33 μ F 16V M	D2/D1	
C406L/R	3479247971	Electrolytic 4.7 μ F 50V M	D2/D1	
C407L/R	3679273120	Mylar 0.027 μ F 100V J	D2/D1	
C408L/R	3679273120	Mylar 0.027 μ F 100V J	D2/D1	
C409L/R	3679393120	Mylar 0.039 μ F 100V J	D2/D1	
C410L/R	3679473120	Mylar 0.047 μ F 100V J	D2/D1	
C411L/R	3679273120	Mylar 0.027 μ F 100V J	D2/D1	
C412L/R	3679123120	Mylar 0.012 μ F 100V J	C2/C1	
C413L/R	3679333120	Mylar 0.033 μ F 100V J	C2/C1	
C414L/R	3679183120	Mylar 0.018 μ F 100V J	C2/C1	
C415L/R	3679153120	Mylar 0.015 μ F 100V J	C2/C1	
C416L/R	3679203120	Mylar 0.02 μ F 100V J	C3/C1	

Ref. No.	Parts No.	Description	Position	Remark
• Coils				
L301 L/R	2658301120	Mpx Filter	E3/F3	
L302 L/R	2648601710	Inductor 21mH	E2/F2	
L401 L/R	2648601140	Inductor 3.5mH	D2/D1	
L402 L/R	2648601130	Inductor 2.5mH	D2/D1	
L403 L/R	2648601140	Inductor 3.5mH	D2/D1	
L404 L/R	2648601040	Inductor 2mH	C2/C1	
L405 L/R	2648601040	Inductor 2mH	C2/C1	
L406 L/R	2648601040	Inductor 2mH	C2/C1	
L441 L/R	2668501080	Rec Trap	C5	
L443	2638601150	Bias osc	C5	
• Diodes				
D101	2258106100	1N 4002	C5	
D105	2058306101	1N 4148	C3	
D106	2058306101	1N 4148	C3	
D107	2058306101	1N 4148	F3	
D108	2058306101	1N 4148	F3	
D109	2058306101	1N 4148	F3	
D501L/R	2058306101	1N 4148	E1	
D601	2258106100	1N 4002	A2	
D602	2258106100	1N 4002	A1	
D603	2258106100	1N 4002	A1	
D604	2258106100	1N 4002	A1	
D605	2258106100	1N 4002	B1	
D607	2058599116	Zener 12V	B1	
D608	2058599104	Zener 5.6V	B2	
D610	2058306101	1N 4148	A2	
D612	2058306101	1N 4148	C2	
D613	2058306101	1N 4148	C1	
D614	2058306101	1N 4148	C1	
D701	2058306101	1N 4148	B3	
D702	2058306101	1N 4148	B4	
D703	2058306101	1N 4148	B4	
D704	2258106100	1N 4002	B4	
D705	2058306101	1N 4148	B5	
D706	2058306101	1N 4148	B5	
D707	2058306101	1N 4148	A3	
D708	2058306101	1N 4148	A3	
D709	2058306101	1N 4148	A4	
D710	2058306101	1N 4148	A4	
D711	2258106100	1N 4002	A5	
• ICs				
IC101	2168013105	μ PC 1228H	D4	
IC102	2138009101	MC 14066	D5	
IC103	2168022105	BA 336	D5	
IC201	2168013105	μ PC 1228H	F4	
IC202	2168013105	μ PC 1228H	F5	
IC301	2168000108	CX 20187	E2	
IC601	2168601105	GD 7815	B1	

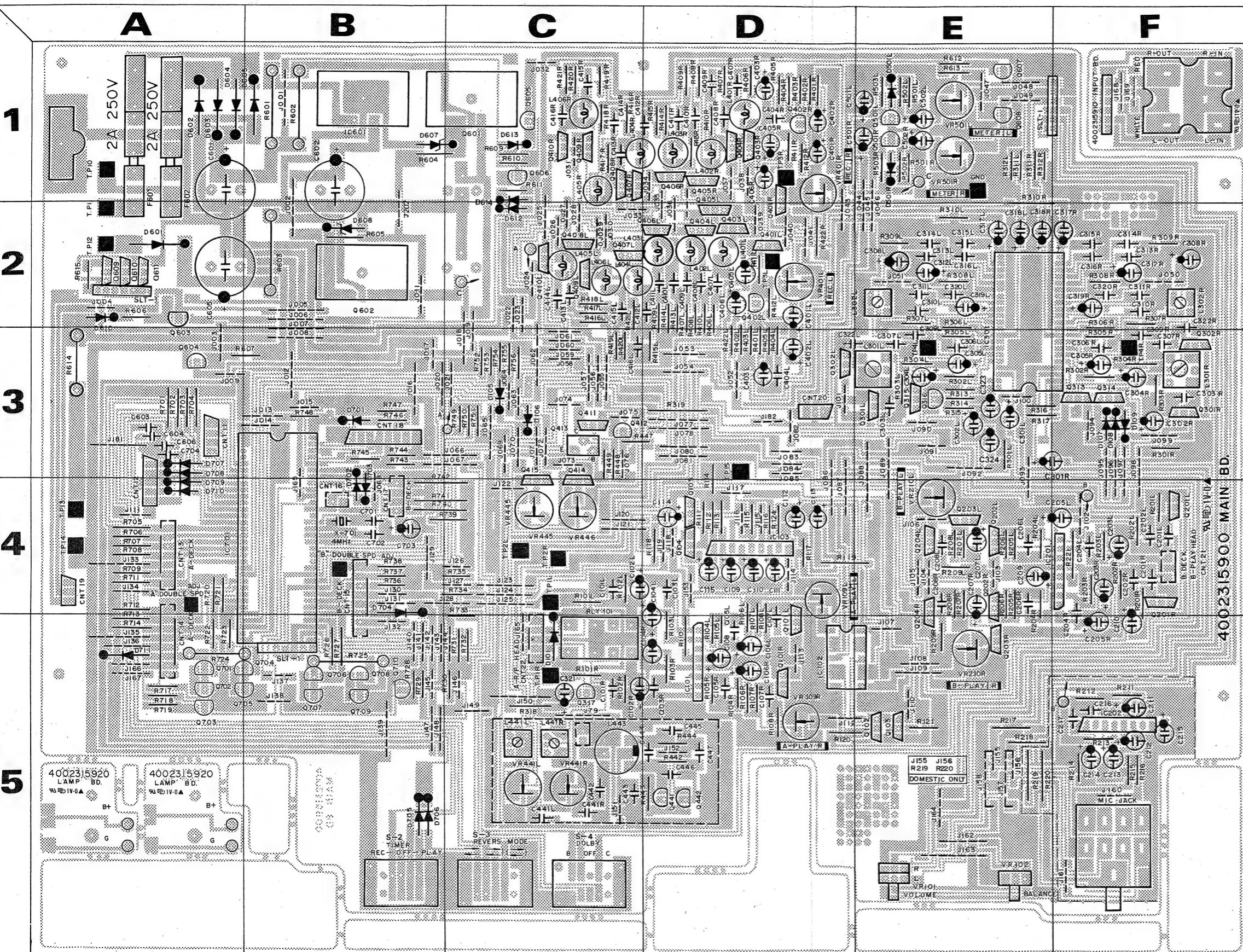
Ref. No.	Parts No.	Description	Position	Remark
IC701	2138307122	TMP 47P 860N	B4	
X701	3908101140	X-TAL 4MHz	B4	
• Relay				
RLY101	5528011020	Relay RX-12W-K	C5	
• Resistors				
R101L/R	3069100970	Carbon Film 10 1/5W J	C4/C5	
R102L/R	3069104970	Carbon Film 100K 1/5W J	C4/C5	
R103L/R	3069121970	Carbon Film 120 1/5W J	D5	
R104L/R	3069243970	Carbon Film 24K 1/5W J	D5	
R105L/R	3069474970	Carbon Film 470K 1/5W J	D5	
R106L/R	3069332970	Carbon Film 3.3K 1/5W J	D5	
R107L/R	3069472970	Carbon Film 4.7K 1/5W J	D5	
R108	3069104970	Carbon Film 100K 1/5W J	D5	
R110	3069102970	Carbon Film 1K 1/5W J	D5	
R111	3069103970	Carbon Film 10K 1/5W J	D4	
R112	3069394970	Carbon Film 390K 1/5W J	D4	
R113	3069394970	Carbon Film 390K 1/5W J	D4	
R114	3069471970	Carbon Film 470K 1/5W J	D4	
R115	3069562970	Carbon Film 5.6K 1/5W J	D4	
R116	3069103970	Carbon Film 10K 1/5W J	D4	
R117	3069473970	Carbon Film 47K 1/5W J	D4	
R118	3069223970	Carbon Film 22K 1/5W J	D4	
R119	3069473970	Carbon Film 47K 1/5W J	D4	
R120	3069222970	Carbon Film 2.2K 1/5W J	D5	
R121	3069222970	Carbon Film 2.2K 1/5W J	E5	
R124	3069472970	Carbon Film 4.7K 1/5W J	D4	
R201L/R	3069224970	Carbon Film 220K 1/5W J	F4	
R202L/R	3069224970	Carbon Film 220K 1/5W J	F4	
R203L/R	3069121970	Carbon Film 120 1/5W J	F4	
R204L/R	3069474970	Carbon Film 470K 1/5W J	E4	
R205L/R	3069822970	Carbon Film 8.2K 1/5W J	E4	
R206L/R	3069123970	Carbon Film 12K 1/5W J	E4	
R207L/R	3069332970	Carbon Film 3.3K 1/5W J	E4	
R208L/R	3069472970	Carbon Film 4.7K 1/5W J	D4	
R209L/R	3069104970	Carbon Film 100K 1/5W J	E4/E5	
R211	3069152970	Carbon Film 1.5K 1/5W J	F5	KS
R212	3069394970	Carbon Film 390K 1/5W J	F5	KS
R213	3069102970	Carbon Film 1K 1/5W J	F5	KS
R214	3069103970	Carbon Film 10K 1/5W J	F5	KS
R215	3069473970	Carbon Film 47K 1/5W J	F5	KS
R216	3069473970	Carbon Film 47K 1/5W J	F5	KS
R217	3069223970	Carbon Film 22K 1/5W J	E5	
R218	3069223970	Carbon Film 22K 1/5W J	E5	
R219	3069223970	Carbon Film 22K 1/5W J	E5	
R220	3069223970	Carbon Film 22K 1/5W J	E5	
R221	3069102970	Carbon Film 1K 1/5W J	F4	
R301L/R	3069473970	Carbon Film 47K 1/5W J	E3/F3	
R302L/R	3069332970	Carbon Film 3.3K 1/5W J	E3/F3	
R303L/R	3069682970	Carbon Film 6.8K 1/5W J	E3/F3	
R304L/R	3069752970	Carbon Film 7.5K 1/5W J	E3/F3	
R305L/R	3069471970	Carbon Film 470 1/5W J	E3/F3	
R306L/R	3069562970	Carbon Film 5.6K 1/5W J	E3/F3	
R307L/R	3069227970	Carbon Film 2.7K 1/5W J	F2/F1	
R308L/R	3069682970	Carbon Film 6.8K 1/5W J	E2/F2	
R309L/R	3069681970	Carbon Film 680 1/5W J	E2/F2	
R310L/R	3069152970	Carbon Film 1.5K 1/5W J	E2/E1	
R311L/R	3069222970	Carbon Film 2.2K 1/5W J	E1	
R312L/R	3069562970	Carbon Film 5.6K 1/5W J	E1	
R313	3069223970	Carbon Film 22K 1/5W J	E3	
R314	3069223970	Carbon Film 22K 1/5W J	E3	
R315	3069682970	Carbon Film 6.8K 1/5W J	E3	
R316	3069103970	Carbon Film 10K 1/5W J	E3	
R317	3069103970	Carbon Film 10K 1/5W J	E3	
R318	3069222970	Carbon Film 2.2K 1/5W J	C5	
R319	3069103970	Carbon Film 10K 1/5W J	D3	
R401L/R	3069393970	Carbon Film 39K 1/5W J	D3/D1	
R402L/R	3069822970	Carbon Film 8.2K 1/5W J	D3/D1	
R403L/R	3069224970	Carbon Film 220K 1/5W J	D3/D1	
R404L/R	3069182970	Carbon Film 1.8K 1/5W J	D3/D1	
R405L/R	3069242970	Carbon Film 2.4K 1/5W J	D3/D1	
R406L/R	3069560970	Carbon Film 56 1/5W J	D2/D1	
R407L/R	3069150970	Carbon Film 15 1/5W J	D2/D1	
R408L/R	3069682970	Carbon Film 6.8K 1/5W J	D2/D1	
R409L/R	3069820970	Carbon Film 82 1/5W J	D2/D1	
R410L/R	3069332970	Carbon Film 3.3K 1/5W J	D2/D1	
R411L/R	3069122970	Carbon Film 1.2K 1/5W J	D2/D1	
R412L/R	3069681970	Carbon Film 680 1/5W J	D2/D1	

Ref. No.	Parts No.	Description	Position	Remark
R413L/R	3069222970	Carbon Film 2.2K 1/5W J	D2/D1	
R414L/R	3069332970	Carbon Film 3.9K 1/5W J	D2/D1	
R415L/R	3069101970	Carbon Film 100 1/5W J	D3/D1	
R416L/R	3069470970	Carbon Film 47 1/5W J	C2/C1	
R417L/R	3069103970	Carbon Film 10K 1/5W J	C2/C1	
R418L/R	3069332970	Carbon Film 3.3K 1/5W J	C2/C1	
R419L/R	3069101970	Carbon Film 100 1/5W J	C3/C1	
R420L/R	3069472970	Carbon Film 4.7K 1/5W J	C3/C1	
R421L/R	3069242970	Carbon Film 2.4K 1/5W J	C2/C1	
R422L/R	3069472970	Carbon Film 4.7K 1/5W J	D3/D2	
R442	3069333970	Carbon Film 33K 1/5W J	D5	
R443	3069100970	Carbon Film 10 1/5W J	D5	
R444	3069133970	Carbon Film 33K 1/5W J	D5	
R447	3069473970	Carbon Film 47K 1/5W J	C3	
R448	3069821970	Carbon Film 820 1/5W J	C3	
R449	3069222970	Carbon Film 2.2K 1/5W J	C3	
R501L/R	3069393970	Carbon Film 39K 1/5W J	E1	
R502L/R	3069183970	Carbon Film 18K 1/5W J	E1	
R503L/R	3069333970	Carbon Film 33K 1/5W J	E1	
R601	3039339472	Metal Oxide 3.3 1W	B1	
R602	3039339472	Metal Oxide 3.3 1W	B1	
R603	3039339472	Metal Oxide 3.3 1W	B2	
R604	3069221970	Carbon Film 220 1/5W J	B1	
R605	3069221970	Carbon Film 220 1/5W J	B2	
R606	3069222970	Carbon Film 2.2K 1/5W J	A2	
R609	3069222970	Carbon Film 2.2K 1/5W J	C1	
R610	3069472970	Carbon Film 4.7K 1/5W J	C1	
R611	3069102970	Carbon Film 1K 1/5W J	C1	
R612	3069333970	Carbon Film 3.3K 1/5W J	E1	
R613	3069332970	Carbon Film 3.3K 1/5W J	E1	
R614	3039221472	Metal Oxide 220 1W	A3	
R615	3069103970	Carbon Film 10K 1/5W J	A2	
R701	3069103970	Carbon Film 10K 1/5W J	A3	
R702	3069103970	Carbon Film 10K 1/5W J	A3	
R703	3069103970	Carbon Film 10K 1/5W J	A3	
R704	3069103970	Carbon Film 10K 1/5W J	A3	
R705	3069103970	Carbon Film 10K 1/5W J	A4	
R706	3069103970	Carbon Film 10K 1/5W J	A4	
R707	3069103970	Carbon Film 10K 1/5W J	A4	
R708	3069103970	Carbon Film 10K 1/5W J	A4	
R709	3069103970	Carbon Film 10K 1/5W J	A4	
R711	3069103970	Carbon Film 10K 1/5W J	A4	
R712	3069103970	Carbon Film 10K 1/5W J	A4	
R713	3069103970	Carbon Film 10K 1/5W J	A5	
R714	3069103970	Carbon Film 10K 1/5W J	A5	
R717	3069223970	Carbon Film 22K 1/5W J	A5	
R718	3069472970	Carbon Film 4.7K 1/5W J	A5	
R719	3069103970	Carbon Film 10K 1/5W J	A5	
R720	3069102970	Carbon Film 1K 1/5W J	A4	
R721	3069102970	Carbon Film 1K 1/5W J	A4	
R722	3069471970	Carbon Film 470 1/5W J	A5	
R723	3069471970	Carbon Film 470 1/5W J	A5	
R724	3039220472	Metal Oxide 22 1W	A5	
R725	3039220472			

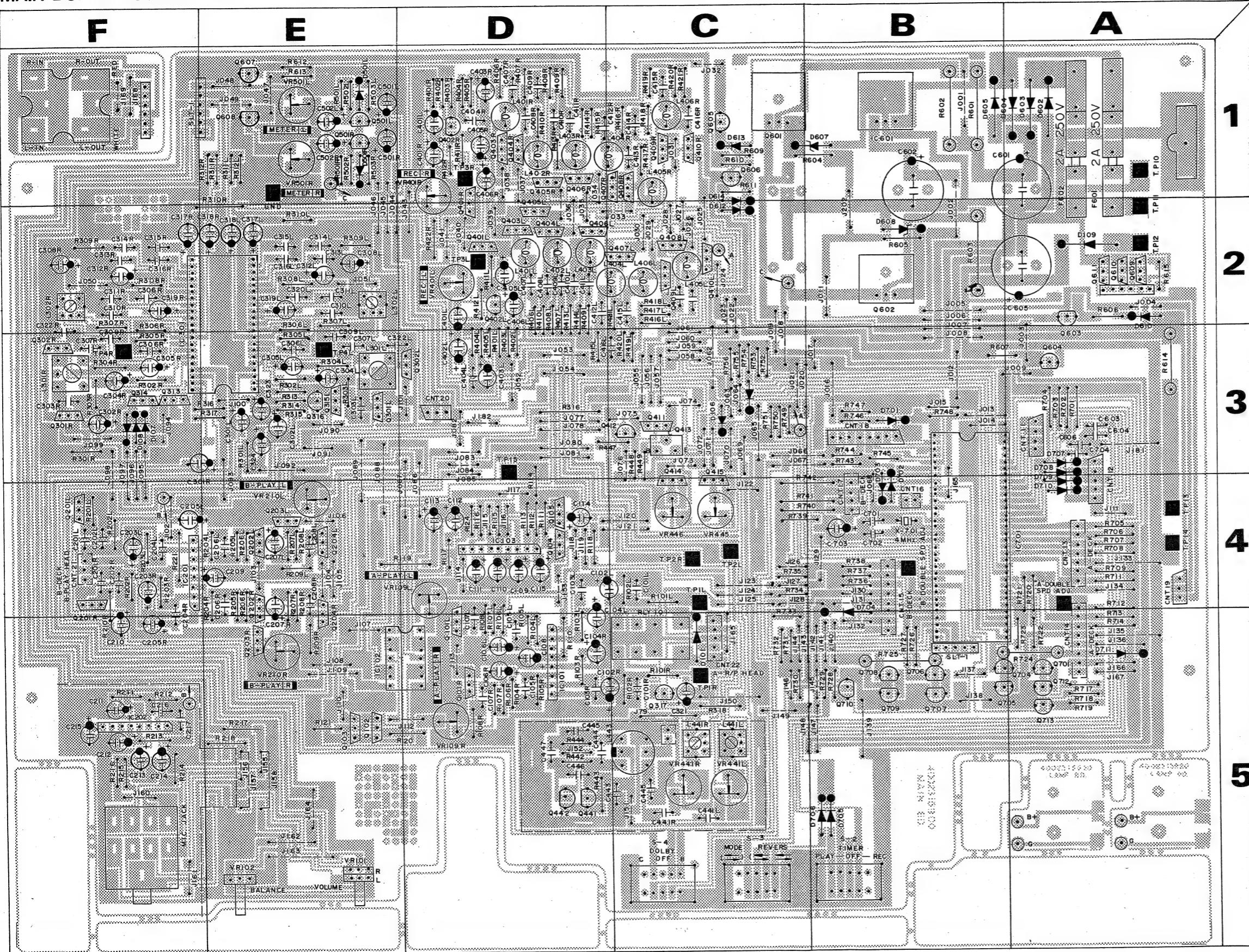
Top & Bottom View of P.C Boards

MAIN BOARD 4002315900

- TOP VIEW

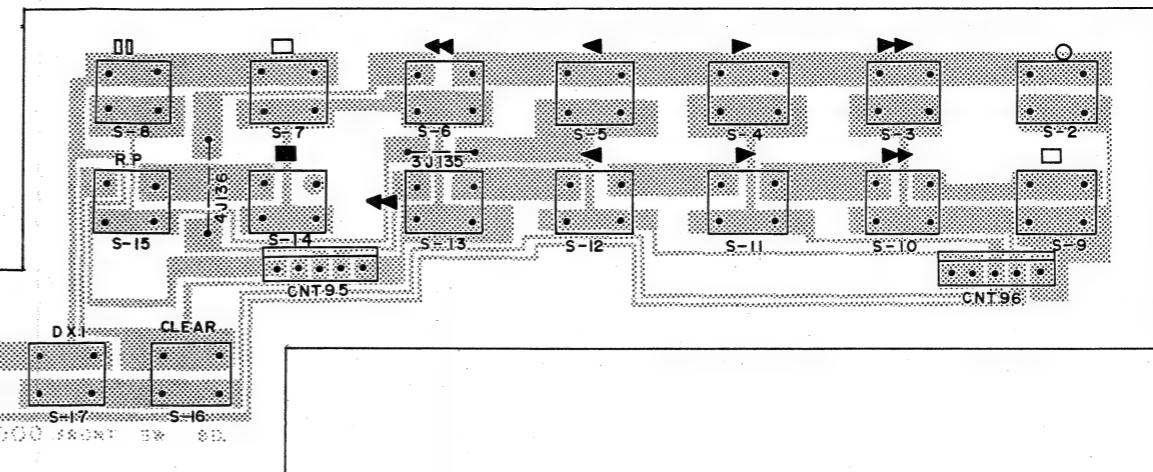
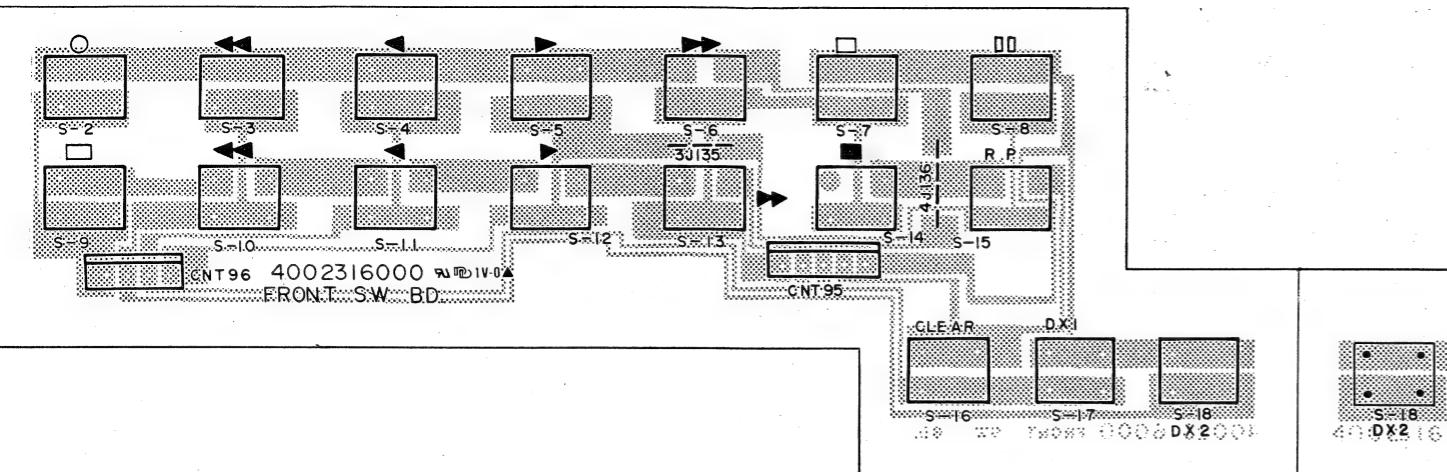


MAIN BOARD 4002315900 - BOTTOM VIEW



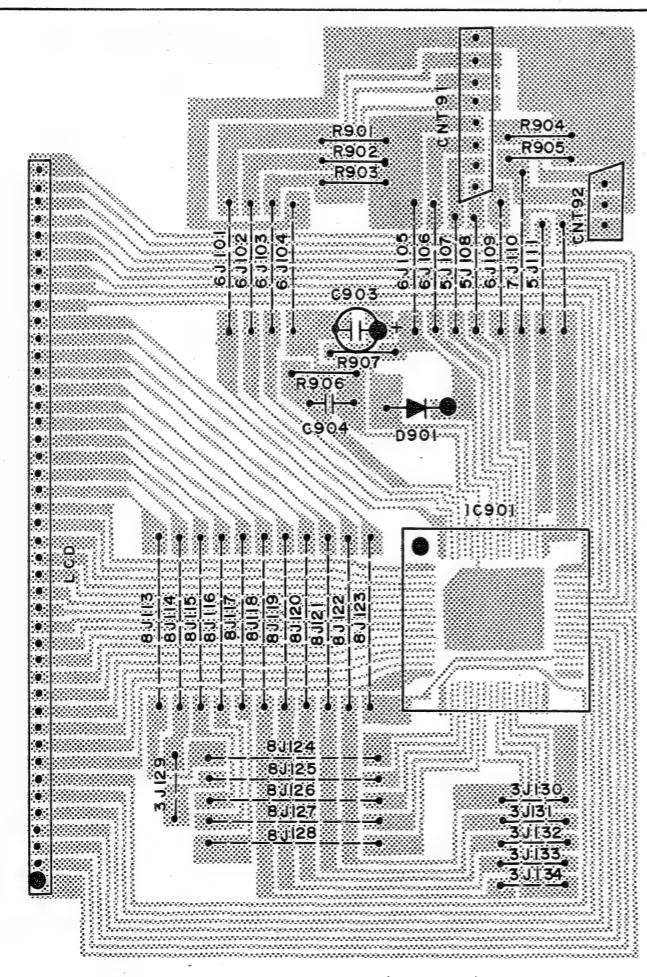
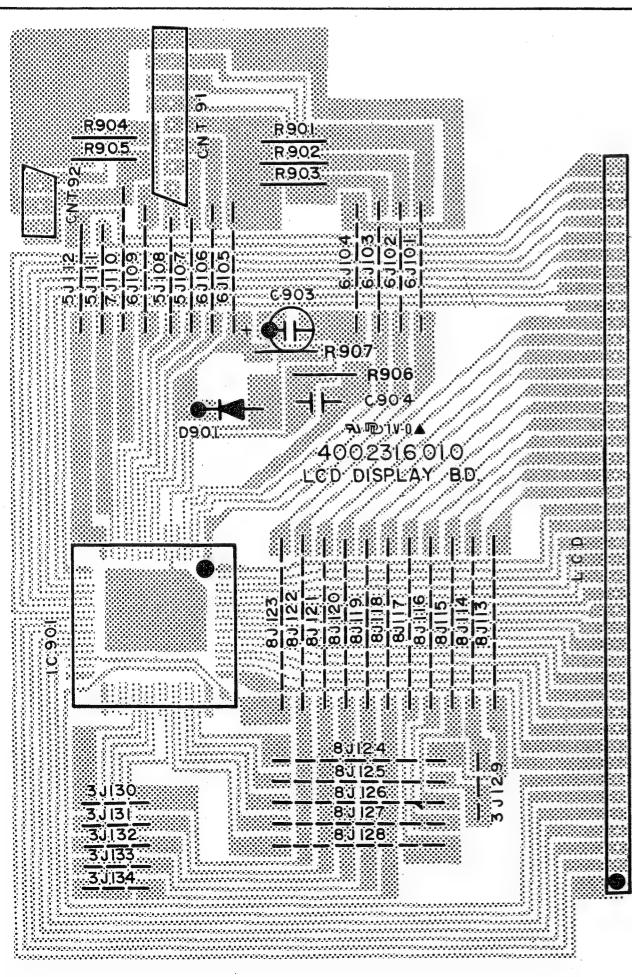
FRONT SW BOARD 4002316000

- TOP VIEW



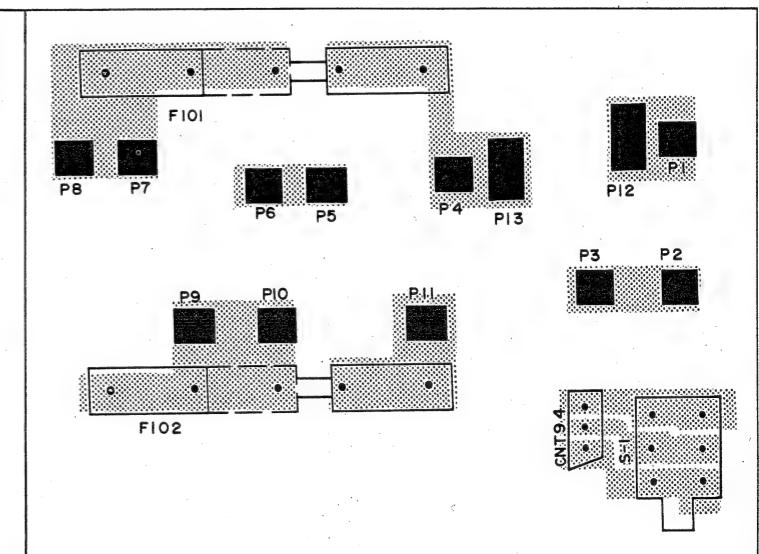
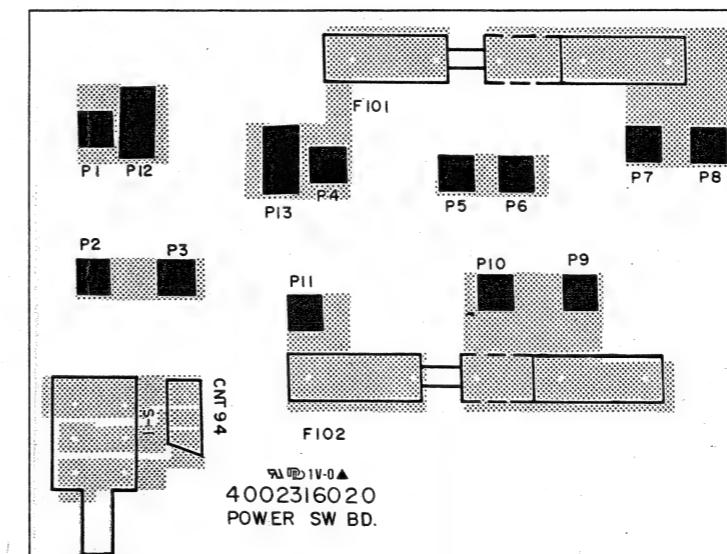
LCD DISPLAY BOARD 4002316010

- TOP VIEW



POWER SW BOARD

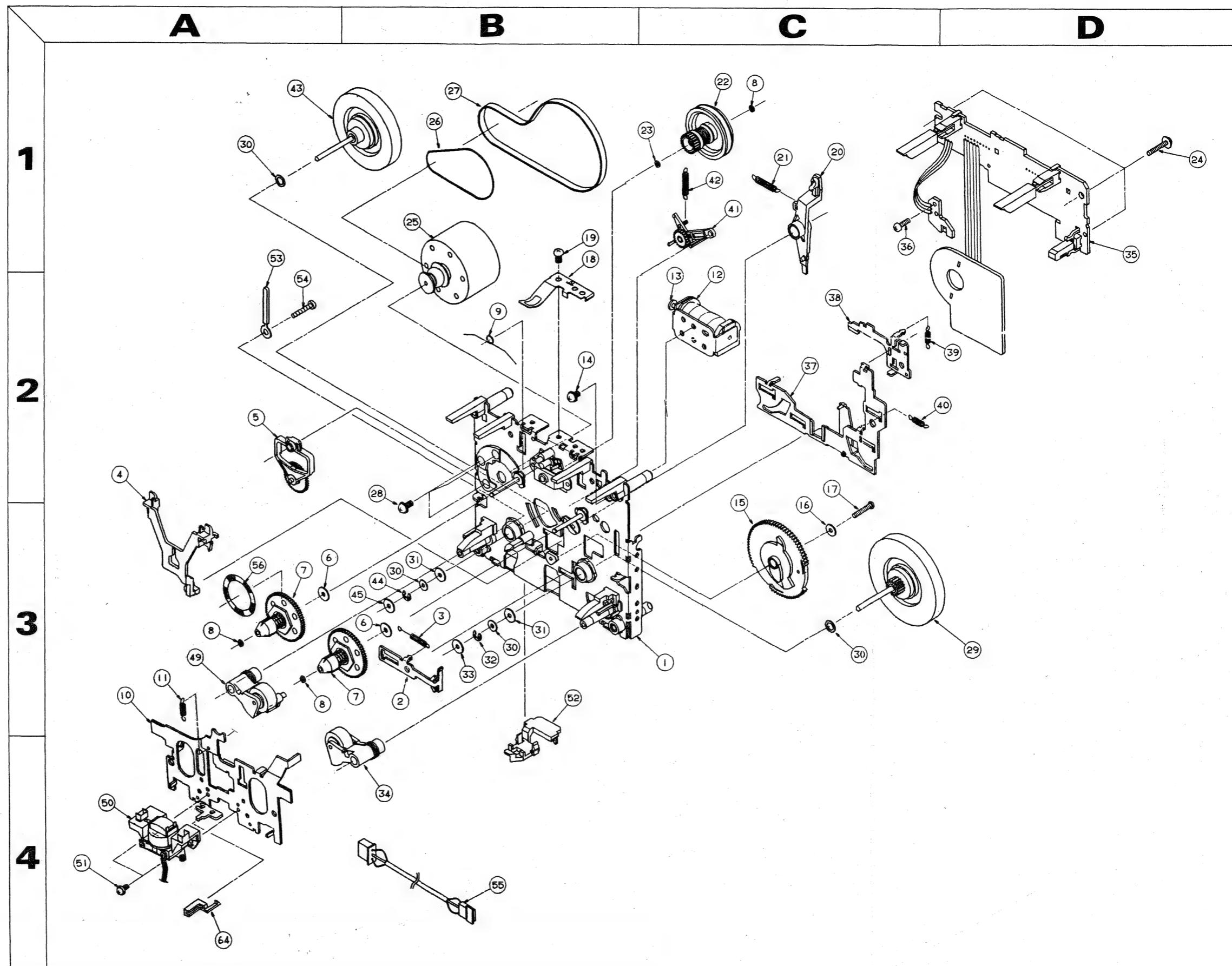
- TOP VIEW



Parts List & Exploded View of Deck Mechanism (I)

No.	Part No.	Description		Q'ty	Remark
		Parts Code	Parts Name		
1	5708903700	F112-118	Ass'y Chassis	1	
2	5708903710	FC48R-25	Cam Gear	1	
3	5708903720	FK26H-13	Spring Gear Cam SP	1	
4	5708903730	FD40K-26	Lever Hold	1	
5	5708903740	F017-048	Ass'y Idler	1	
6	5708903750	UJ12V-11	Poly Slider 2.1×0.25 T	2	
7	5708903760	F105-027	Ass'y Reel	2	
8	5708903770	FJ111-17	Poly Slider 1.7×0.25	3	
9	5708903780	FK26R-12	Spring Hold SP	1	
10	5708903790	FC48U-31	Ass'y Head Plate	1	
11	5708903800	FK26N-14	Spring Head Base	1	
12	5708903810	F265-252	Ass'y Solenoid PKA 16145/AY	1	
13	5708903820	PL366-11	Plunger	1	
14	5708903830	UG11S-14	Screw 2.6×3.5 ZN	1	
15	5708903840	FD40M-27	Cam Gear(s)	1	
16	5708903850	MJ112-22	Washer 2.0 ZN	1	
17	5708903860	UG12H-20	Screw 2.0×13 ZNT	1	
18	5708903870	FC49E-12	Spring Cassettes Pushing	1	
19	5708903880	KG194-29	Screw TT 2.6×5 ZN	1	
20	5708903890	FD40L-22	Arm Play	1	
21	5708903900	FK22G-11	Spring Arm Play	1	
22	5708903910	FR20V-11	Ass'y Clutch	1	
23	5708903920	FJ111-19	Poly Slider 2.1×0.13	1	
24	5708903930	UG15U-11	Screw 2×13	3	
25	5708903940	F064-250	Ass'y Motor	1	
26	5708903950	FF17H-13A	Belt Sub.	1	
27	5708903960	FF17G-11	Belt Main	1	
28	5708903970	FG114-14	Screw 2.6×5 ZN	3	
29	5708903980	FR21E-14C	Ass'y Flywheel 2.5	1	
30	5708903990	FJ111-30	Poly Slider 2.6×0.25	4	
31	5708904000	UJ13V-11	Poly Slider 2.6×0.25 T	2	
32	5708904010	UG13U-12	E Ring	1	
33	5708904020	FJ141-11	Washer Oil Seal 2.4×0.25 T	1	
34	5708904030	FR20W-11	Ass'y Pinch Roller 2.5	1	
35	5708904040	F062-155	Ass'y Sensor B'D	1	
36	5708904050	UG12H-26	Screw 2×6	1	
37	5708904060	FC48T-24	Ass'y Slide Plate	1	
38	5708904070	FC48S-22	Plate Control	1	
39	5708904080	FK26M-13	Spring Plate Control	1	
40	5708904090	FK26P-12	Spring Slide	1	
41	5708904100	F120-017	Ass'y Gear Arm	1	
42	5708904110	FK26K-12	Spring Reverse Gear	1	
43	5708904120	FR20U-15	Ass'y FLY Wheel 2.2	1	
44	5708904130	UG13U-15	E Ring	1	
45	5708904140	FJ141-14	Washer Oil Seal	1	
46	5708904150		Not used!		
47	5708904160		Not used!		
48	5708904170		Not used!		
49	5708904180	FR20Y-11	Ass'y Pinch Roller 2.2	1	
50	5708904190	F257-162	Ass'y Rotary Head	1	
51	5708904200	KG194-35	Screw 2.0×5 ZN	2	
52	5708904210	FD41U-25	Lead Holder	1	
53	5708904220	UH11Y-11	LUG	1	
54	5708904230	UG12H-14	Screw 2.6×8	1	
55	5708904240	WH48H-15	Ass'y Connector	1	
56	5708904250	UT18G-15	Plate Reflector	1	
64	5708904260	FD44F-11	Protector	1	

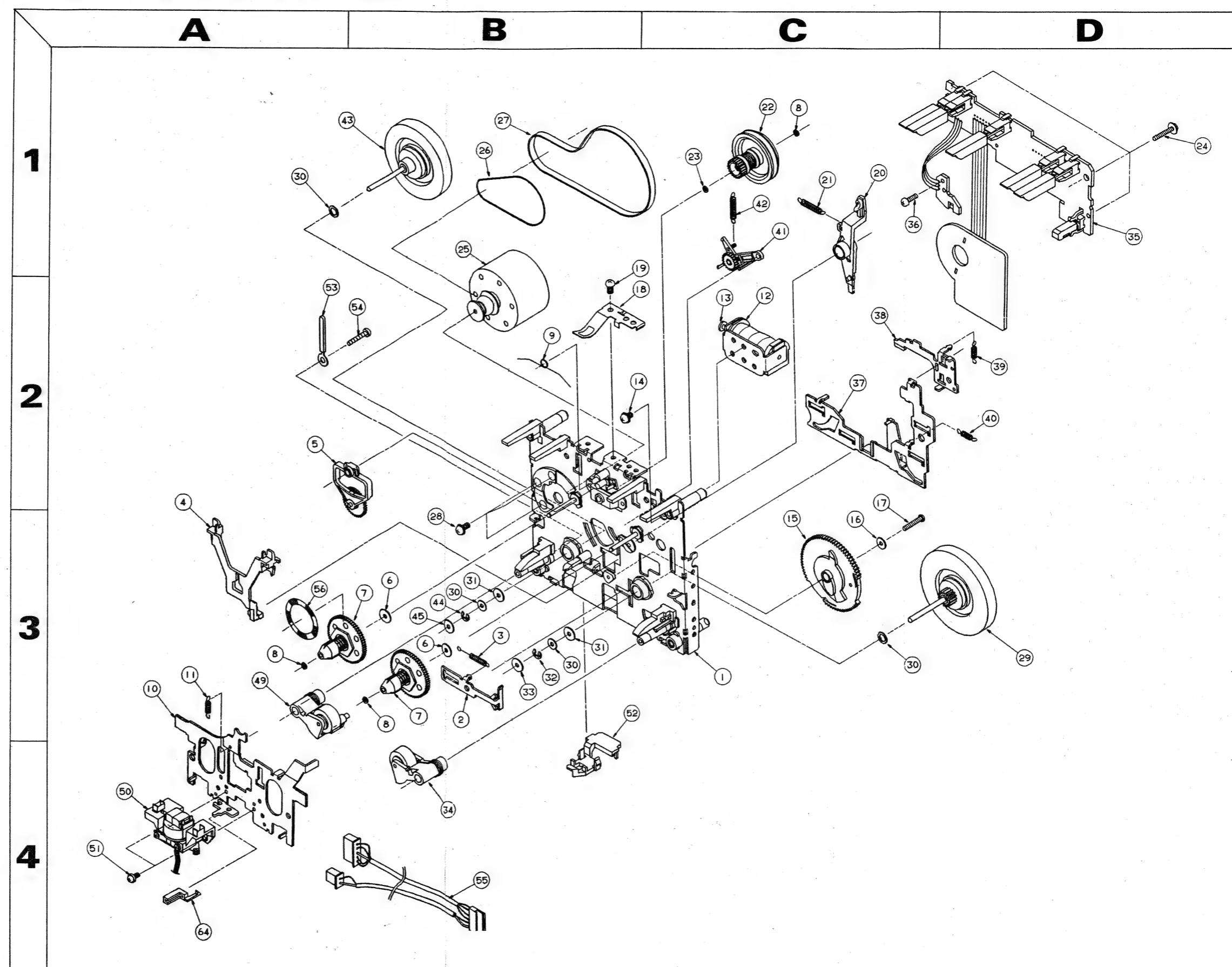
* CMAB2Z033A: MADE BY ALPS ELECTRIC CO., LTD.
 * FUNCTION → only PLAYBACK



Parts List & Exploded View of Deck Mechanism (II)

No.	Part No.	Description		Q'ty	Remark
		Parts Code	Parts Name		
1	5708904300	F112-118	Ass'y Chassis	1	
2	5708904310	FC48R-25	Cam Gear	1	
3	5708904320	FK26H-13	Spring Gear Cam	1	
4	5708904330	FD40K-26	Lever Hold	1	
5	5708904340	F017-048	Ass'y Idler	1	
6	5708904350	UJ12V-11	Poly Slider 2.1×0.25 T	2	
7	5708904360	F105-027	Ass'y Reel	2	
8	5708904370	FJ111-17	Poly Slider 1.7×0.25	3	
9	5708904380	FK26R-12	Spring Holder	1	
10	5708904390	FC48U-31	Ass'y Head Plate	1	
11	5708904400	FK26N-14	Spring Head Base	1	
12	5708904410	F265-252	Ass'y Solenoid PKA 16145/AY	1	
13	5708904420	PL366-11	Plunger	1	
14	5708904430	UG11S-14	Screw 2.6×3.5 Z	1	
15	5708904440	FD40M-27	CAM Gear(s)	1	
16	5708904450	MJ112-22	Washer 2.0 ZN	1	
17	5708904460	UG12H-20	Screw 2.0×13 ZNT	1	
18	5708904470	FC49E-12	Spring Cassette Pushing	1	
19	5708904480	KG194-29	Screw TT2.6×5 ZN	1	
20	5708904490	FD40L-22	Arm Play	1	
21	5708904500	FK22G-11	Spring Arm Play	1	
22	5708904510	FR20V-11	Ass'y Clutch	1	
23	5708904520	FJ111-19	Poly Slider 2.1×0.13	1	
24	5708904530	UG15U-11	Screw 2×13	3	
25	5708904540	F064-250	Ass'y Motor	1	
26	5708904550	FF17H-13A	Belt SUB.	1	
27	5708904560	FF17G-11	Belt Main	1	
28	5708904570	FG114-14	Screw 2.6×5 ZN	3	
29	5708904580	FR21E-14C	Ass'y Flywheel 2.5	1	
30	5708904590	FJ111-30	Poly Slider 2.6×0.25	4	
31	5708904600	UJ13V-11	Poly Slider 2.6×0.25 T	2	
32	5708904610	UG13U-12	E Ring	1	
33	5708904620	FJ141-11	Washer Oil Seal 2.4×0.25 T	1	
34	5708904630	FR20W-11	Ass'y Pinch Roller 2.5	1	
35	5708904640	F062-156	Ass'y Sensor B'D	1	
36	5708904650	UG12H-26	Screw 2×6	1	
37	5708904660	FC48T-24	Ass'y Slide Plate	1	
38	5708904670	FC48S-22	Plate Control	1	
39	5708904680	FK26M-13	Spring Plate Control	1	
40	5708904690	FK26P-12	Spring Slide	1	
41	5708904700	F120-017	Ass'y Gear Arm	1	
42	5708904710	FK26K-12	Spring Reverse Gear	1	
43	5708904720	FR20U-15	Ass'y Fly Wheel 2.2	1	
44	5708904730	UG13U-15	E Ring	1	
45	5708904740	FJ141-14	Washer Oil Seal	1	
46	5708904750		Not used!		
47	5708904760		Not used!		
48	5708904770		Not used!		
49	5708904780	FR20Y-11	Ass'y Pinch Roller 2.2	1	
50	5708904790	F257-162	Ass'y Rotary Head	1	
51	5708904800	KG194-35	Screw 2.0×5 ZN	2	
52	5708904810	FD41U-25	Lead Holder	1	
53	5708904820	UH11Y-11	LUG	1	
54	5708904830	UG12H-14	Screw 2.6×8	1	
55	5708904840	WH48K-55	Ass'y Connector	1	
56	5708904850	UT18G-15	Plate Reflector	1	
64	5708904860	FD44F-11	Protector	1	

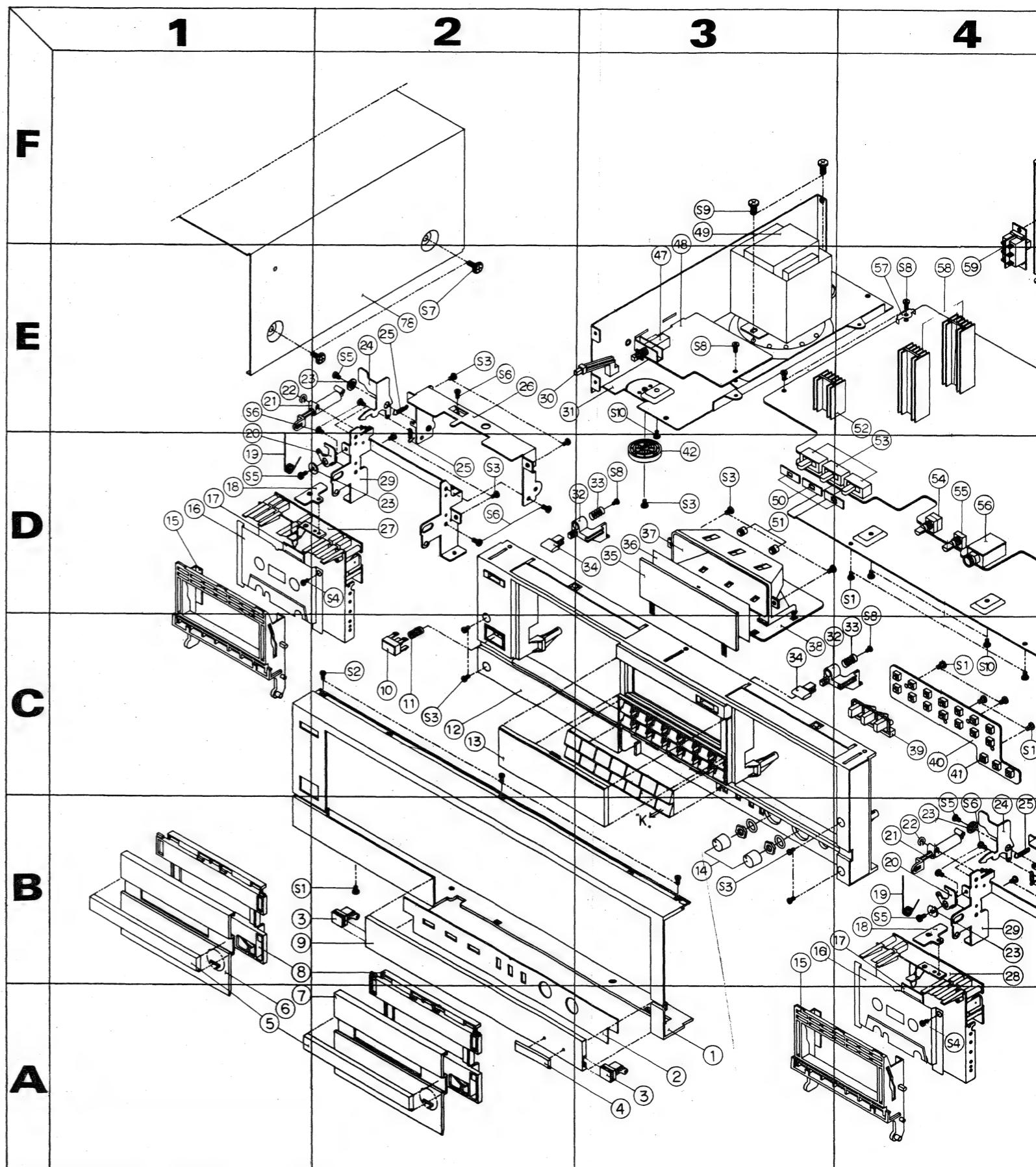
* CMAB22034A: MADE BY ALPS ELECTRIC CO., LTD.
* FUNCTION → only RECORDING/PLAYBACK

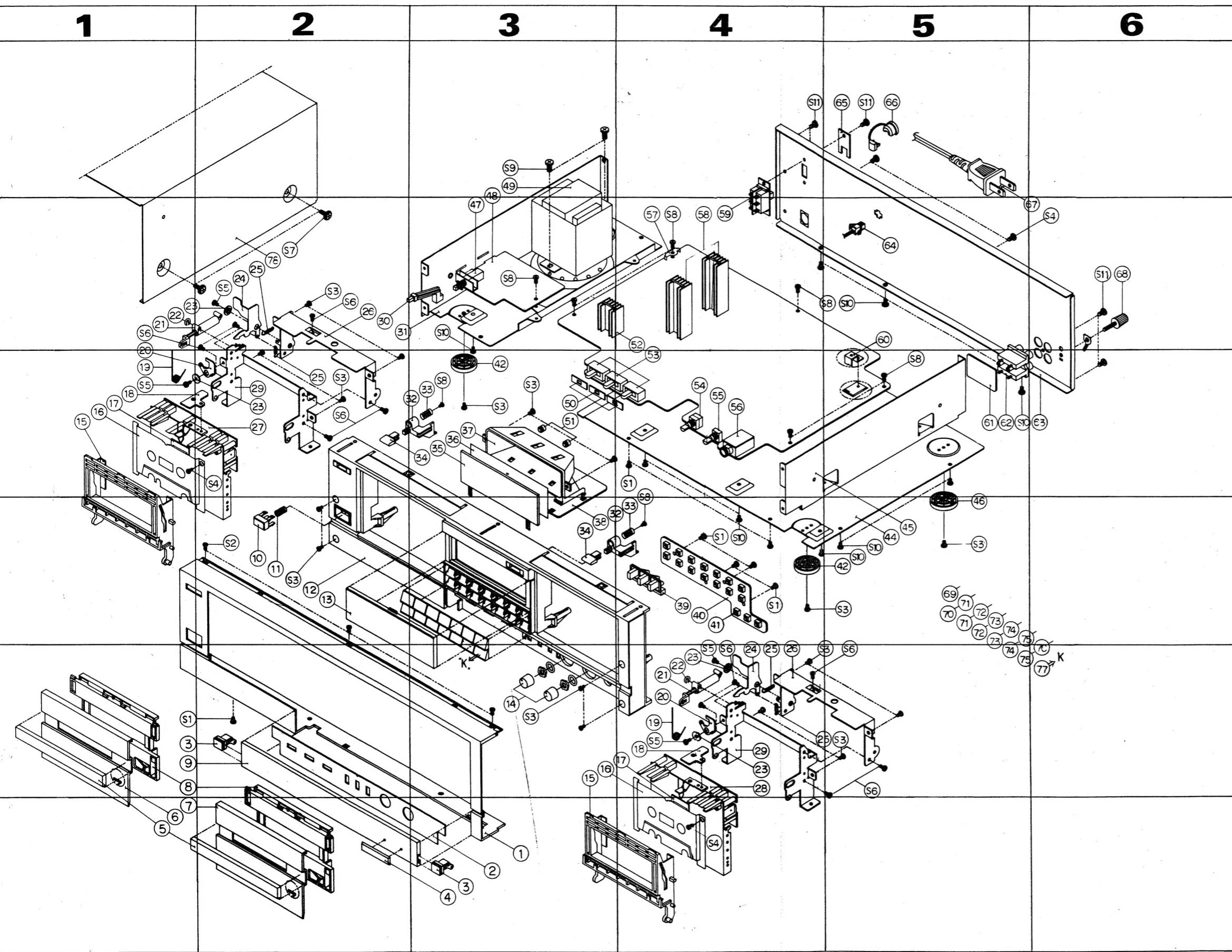


Parts List & Exploded View of Cabinet & Chassis

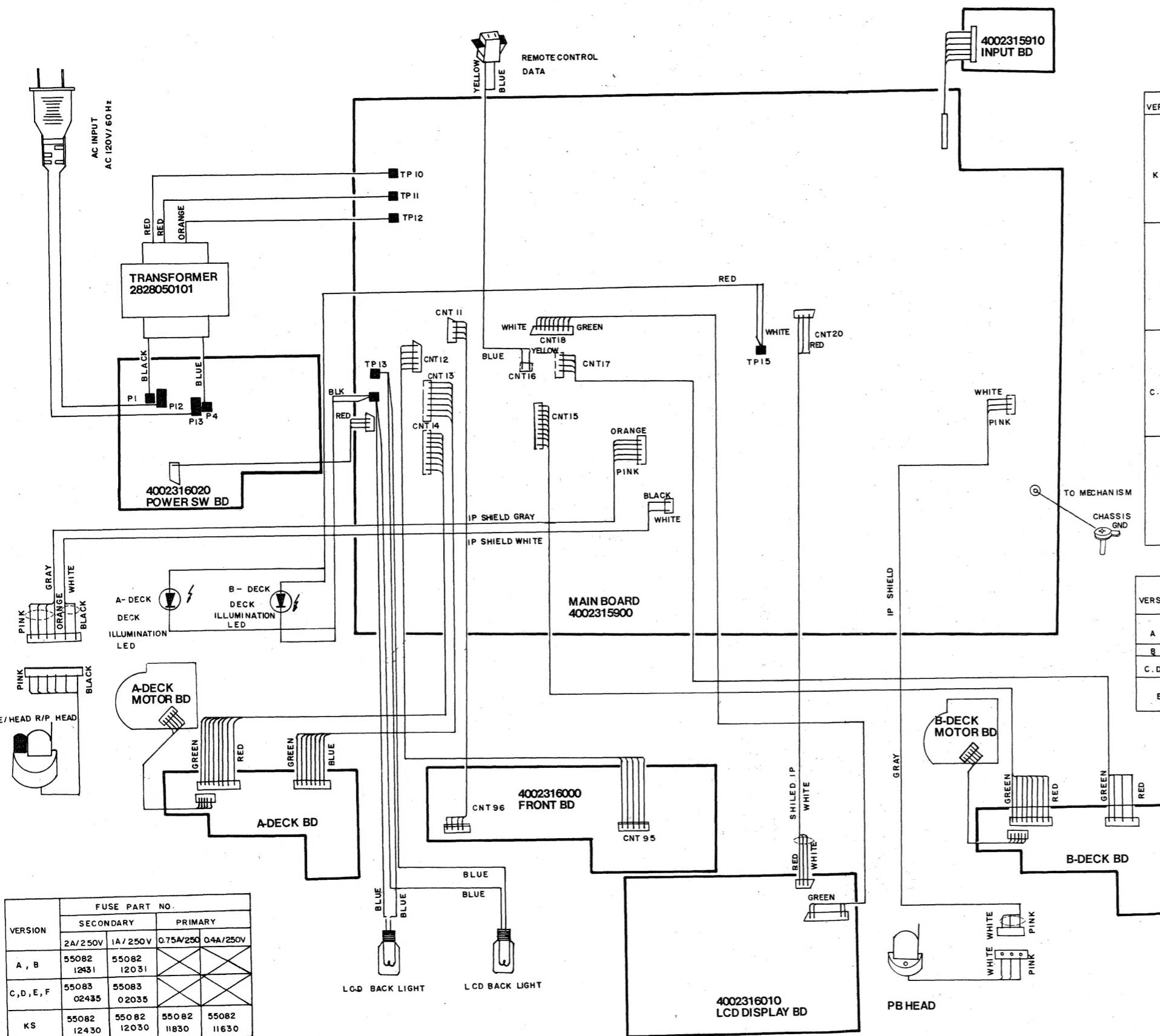
No.	Parts No.	Description	Position	Q'ty	Remark
1	048602016011	Panel-Front, Black	A3	1	
2	048623004011	Plate-Function	A3	1	
3	6545000310	Hinge-Door	A3, B1	2	
4	048535022011	Door-Ass'y, Function	A3	1	
5		Not used			
6	048663000611	Door-Deck (A)	A1	1	
7	048663000612	Door-Deck (B)	A1	1	
8	8562001410	Guide-Door	B1	2	
9	048665000521	Door-Function	B1	1	
10	048545048211	Button-Power	C2	1	
11	6555004380	Spring-Power	C2	1	
12	048521004711	Body-Front	C2	1	
13	048555021011	Window, LCD	C2	1	
14	048545052211	Knob-Rotary	B3	2	
15	8562001010	LED Cassete	B3, D1	2	
16	048683000911	Cover-Mecha	B3, D1	2	
17	2308270603	LED ALD 980	B4, D1	2	
18	4002316030	LED-PCB	B4, D1	2	
19	6555603120	Spring-Door	B4, D1	2	
20	6515011310	Stopper-Eject	B4, D1	2	
21	6308001510	Damper Air	B4, E1	2	
22	8339020011	Ear Ring (02)	B4, E1	2	
23	7015003320	Bushing-Eject	B4, E1, E2	4	
24	6505083110	Lever-Eject	B4, E2	2	
25	6555304410	Spring-Eject	B4, E2, D2	4	
26	6503011910	Bracket-Mecha (T)	B4, E2	2	
27	5708008310	Deck-Mecha (A)	D2	1	
28	5708008320	Deck-Mecha (B)	B4	1	
29	6503012010	Bracket-Mecha	B4, D2	2	
30	6305001410	Shaft-Push	E2	1	
31	6122616120	Chassis-Main	E2	1	
32	8523009310	Arm-Eject	D3, C4	2	
33	6555005630	Spring-Power	D3, C4	2	
34	8545052910	Button-Eject	C3, D3	2	
35	2338179923	LCD	D3	1	
36	8535022410	Diffuser	D3	1	
37	6063001310	Holder-LCD	D3	1	
38	4002316010	LCD-PCB	C3	1	
39	8543015210	Button-Tactile (3Key)	C4	1	
40	4002316000	PCB, Front	C4	1	
41	4658002910	Switch-Tact	C4	17	
42	046035101511	Base-Foot (A)	C5, D3	2	
43		Not used			
44	6122412420	Cover, Button, Black	C5	1	
45	6123618910	Frame-Side, Right	C5	1	Domestic
46	6035101510	Base-Foot, Black	C5	2	
47	6035101511	Base-Foot, Gold	C5	2	
48	4628048810	Switch-Push, 1Key, Power	E3	1	
49	4002316020	PCB, Fuse	F3	1	
50	2825052307	Power-Transformer	F3	1	
51	6705009310	Slide-Cover	D3	3	
52	6715010410	Lamp-Holder	D3	2	
53	7505201110	Heatsink, Regulator Tr (B)	E4	1	
54	4618005910	Switch-Slide	D4	3	
55	3208052310	RV 100KA x2	D4	1	
56	3208052710	RV 100KSW	D4	1	
57	4235000110	Not used:			
58	7505201130	Plate-Ground	E4	1	
59	4618000410	Heatsink, Regulator Tr (A)	E4	2	
60	4618000410	Voltage-Selector	E4	1	B
61	6505022811	Bracket-PCB	E5	1	
62	4002315910	PCB, Input	D5	1	
63	4438102010	Jack-RCA, 4 Pin	D5	1	A
64	046102022921	Chassis-Back, Black	D6	1	B
65	046102022931	Chassis-Back, Black	D6	1	C
66	046102022941	Chassis-Back, Black	D6	1	D
67	046102022951	Chassis-Back, Black	D6	1	E
68	046102022961	Chassis-Back, Black	D6	1	F
69	046102022971	Chassis-Back, Black	D6	1	
70	4428511240	Connector-Ass'y	E5	1	
71	6515000630	Holder-Voltage	F5	1	B
72	6518000710	Stopper-Cord, AC, Black	F5	1	A, B
73	6518000111	Stopper-Cord, AC, Black	F5	1	C, D, F
74	6518000110	Stopper-Cord, AC, Black	F5	1	E
75	4308001410	Cord-AC, Power, Black	E6	1	A, B
76	4308000430	Cord-AC, Power, Black	E6	1	C, D
77	4308003610	Cord-AC, Power, Black	E6	1	E, F
78	4408103710	Terminal-Ground	E6	1	
79	048545052711	Button-Cap, Rec	C5	1	
80	048545052712	Button-Cap, Rec Mute	C5	1	

No.	Parts No.	Description	Position	Q'ty	Remark
71	048545052713	Button-Cap, Rewind	C5	2	
72	048545052714	Button-Cap, Reverse Play	C5	2	
73	048545052715	Button-Cap, Forward Play	C5	2	
74	048545052716	Button-Cap, Fast Forward	B5, C5	2	
75	048545052717	Button-Cap, Stop	B5, C5	2	
76	048545052718	Button-Cap, Pause	B6	1	
77	048545052719	Button-Cap, Relay Play	B6	1	
78	046122016311	Cover-Top, Black	E2	1	
S1	8109230081	Screw, #2 BTC3 x 8ZNY	B1, C4, D4	7	
S2	8129230061	Screw, #2 FTC3 x 6ZNY	C2, B3, B5	3	
S3	8159230081	Screw, #2 WPTC3 x 8ZNY	D2, E2, C5, D3	12	
S4	8109230083	Screw, #2 BTC3 x 8ZNB	A4, D2, E6	4	
S5	8119430061	Screw, SAM 3 x 6ZNY	D1, E2, B4	4	
S6	8119426061	Screw, SAM 2.6 x 6ZNY	E1, D2, E2	10	
S7	8159440083	Screw, WSAM 4 x 8ZNB	E2	4	
S8	8159230061	Screw, WPTC B3 x 6ZNY	D3, D4, E3	8	
S9	8159440081	Screw, WSAM 4 x 8ZNY	F3	2	
S10	8109230061	Screw, #2 BTC3 x 6ZNY	E3, C4, C5	11	
S11	8119230083	Screw, #2 PTC3 x 8ZNB	F4, E6, F5	7	





Point to Point Wiring Diagram



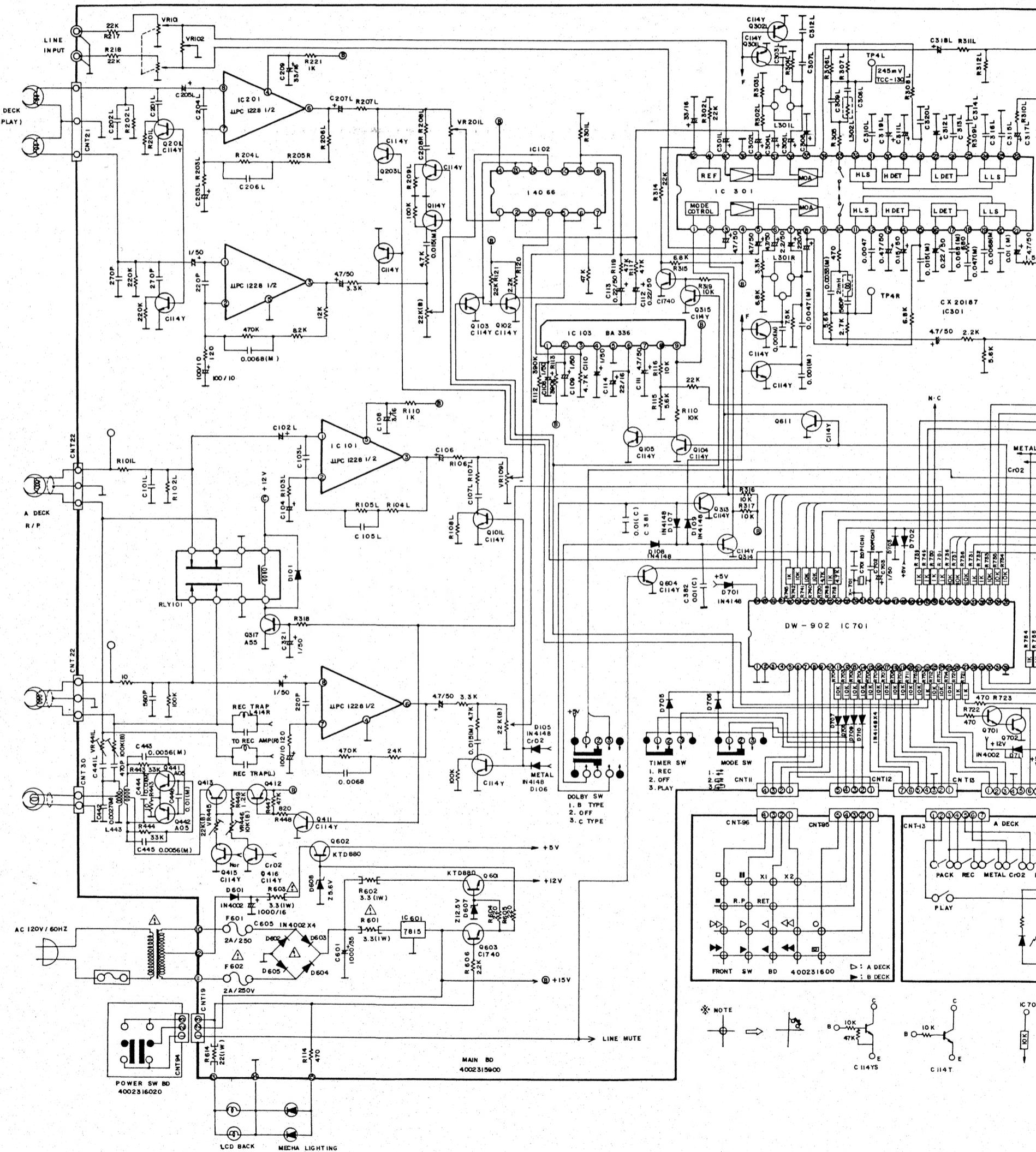
VERSION	FUSE PART NO.			
	SECONDARY		PRIMARY	
	2A/250V	1A/250V	0.75A/250V	0.4A/250V
A , B	55082 12431	55082 12031	X	X
C,D,E,F	55083 02435	55083 02035	X	X
KS	55082 12430	55082 12030	55082 11830	55082 11630

VERSION	CONNECTION OF PRIMARY
K S	
B	
C.D.F.	
E	

VERSION	POWER TRANSFORMER	
	PART NO	REMARK
A	2828050101	120V 60Hz
B	2828052307	120/220V, 60/50Hz
C.D.F	2828052307	220V 50Hz
E	2828052307	240 V 50Hz

A**B****C****D**

Schematic Diagram
DD-1230R

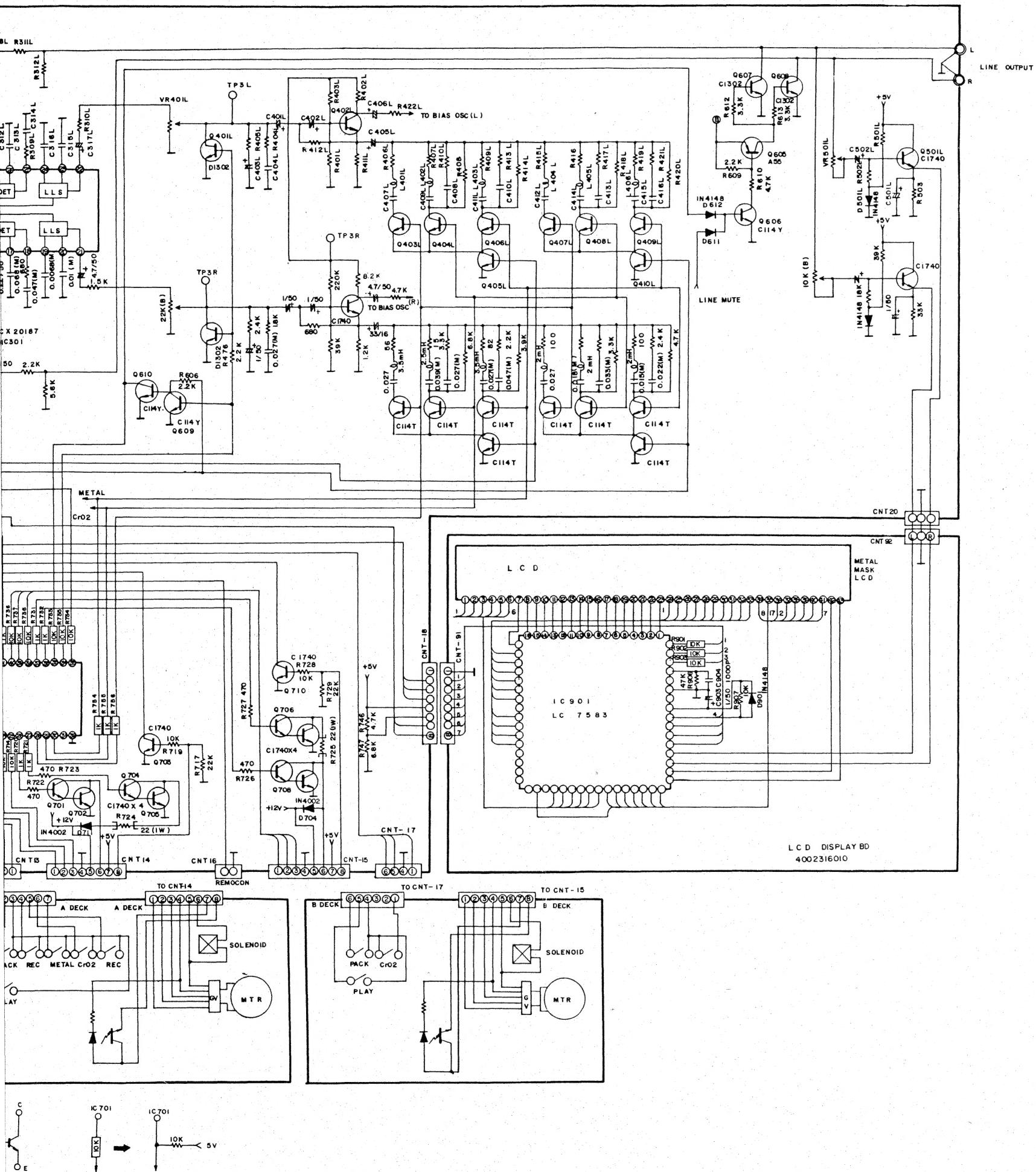
1**2****3****4****5****A****B****C****D**

E

F

G

Diagram 230R



1

2

3

4

5

E

F

G